DeLaRue

user guide

# MACH 12

Coin Sorter and Counter
Basic Control w/RS232 Interface

**DE LA RUE**
**CASH SYSTEMS INC.**

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Dear Customer,

Thank you for purchasing the Mach 12 Coin Sorter/Counter from De La Rue. This product is yet another step to fulfilling our mission:

**To enable the secure and cost effective availability of cash when and where people need it.**

This innovative product incorporates the very latest technology for you to process coins faster and more accurately than ever before. It contains De La Rue designed and patented components which make this product unique.

Additional benefits of the Mach 12 are:

- One of the fastest coin sorters available, sorting coins at speeds of up to 6000 per minute
- Capable of sorting up to nine denominations of coin
- Autofeed system improves throughput
- Few moving parts and simplified electronics, making it easy to use and maintain

With over 100 years' experience in the design, development and manufacture of world class coin processors, De La Rue supplies more products world-wide than any other manufacturer. Quality is paramount in our manufacturing process and we are proud to hold certificates for European quality directives for both safety and electromagnetic standards. In addition to this, manufacturing sites have been awarded ISO9001 quality certificates.

To ensure maximum life from your Sorter, we recommend that it is regularly serviced. To assist you, we provide worldwide service and support through our network of branch offices and authorized distributors. Please contact them for the location of your nearest service office.

We wish you many years of carefree Mach 12 use.

De La Rue
Cash Systems Inc.

De La Rue
Cash Systems Inc.
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Registered Office
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Watertown, WI 53094 USA

# FCC Interference Statement

**Warning**

This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual may cause interference to radio and television reception. It has been tested and found to comply with the limits for a Class A or Class B computing device pursuant to Subpart J of Part 15 of FCC Rules which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference with radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by taking one or more of the following measures:

- Reorient the receiving (radio/TV) antenna
- Move the sorter to the right or left with respect to the receiver
- Move the sorter away from the receiver
- Plug the sorter into a different outlet so that the sorter and receiver are on different branch circuits.

  **Warning:** Only equipment certified to comply with the Class A or Class B limits may be attached. Operation with noncertified equipment is likely to cause radio and TV reception interference.

Peripherals should be interfaced using only shielded cables to maintain FCC Class A or Class B certification and to reduce the possibility of interference with radio and television reception.

**Reference material**

If this equipment does cause reception interference, the user should contact an authorized sales or service representative for suggestions. Two booklets, the CIB Interference Handbook and the CIB Telephone Interference Booklet are provided by the Compliance and Information Bureau of the Federal Communications Commission. To obtain copies, call the Bureau at (202) 418-1100 or on the Internet at http://www.fcc.gov/cib.

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# MACH 12
# Coin Sorter and Counter

## Basic Control
## w/RS232 Interface

**⚠CAUTION**

SAFE OPERATION OF THIS PRODUCT IS DEPENDENT UPON PROPER INSTALLATION WITH COMPATIBLE EQUIPMENT AND BY AN AUTHORIZED SALES OR SERVICE REPRESENTATIVE. INCOMPLETE OR INCORRECT INSTALLATION MAY RESULT IN DAMAGE TO THE EQUIPMENT OR PERSONAL INJURY. ACCIDENTS AND COUNTING INACCURACIES CAN BE AVOIDED IF THE OPERATOR IS COMPLETELY FAMILIAR WITH THIS PRODUCT AND ITS OPERATION. ONLY COINS / TOKENS WITHIN THE RANGES DESCRIBED IN THE SPECIFICATIONS SECTION OF THIS GUIDE SHOULD BE PROCESSED. ANY / ALL OTHER OBJECTS SHOULD BE REMOVED FROM THE COIN MIX BEFORE PROCESSING. NEVER ALLOW TOOLS, FINGERS, HAIR OR LOOSE CLOTHING NEAR MOVING PARTS. NO ATTEMPT SHOULD BE MADE TO DISASSEMBLE THIS PRODUCT. IF SERVICE IS REQUIRED, CONTACT YOUR AUTHORIZED SERVICE REPRESENTATIVE.

**THIS IS NOT A SELF–SERVICE PRODUCT.**

**OPERATION OF THIS PRODUCT SHOULD BE PERFORMED ONLY BY PROPERLY TRAINED PERSONS.**

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**BOX 200**
**705 SOUTH 12TH STREET**
**WATERTOWN, WISCONSIN 53094**
**USA**

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CE

# Declaration of conformity

**Manufacturer & responsible person**

DE LA RUE
CASH SYSTEMS INC.
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705 S. 12th Street
Watertown, WI 53094 USA
Telephone: (920) 262 - 3300
Fax: (920) 261 - 1783

**Details of product**

Coin Sorter / Counter

**Model types**

6400000 – 6499999 (230V)

**This product conforms to the essential requirements of:**

Directive 89 / 336 / EEC Electromagnetic compatibility

Directive 73 / 23 / EEC Low voltage electrical equipment (safety)

and conformity has been demonstrated by meeting the applicable requirements of the following standards:

| | |
|---|---|
| **EN 60950** | **Safety of Information Technology Equipment Including Electrical Business Equipment** |
| **EN 50081-1:1992** | **Electromagnetic Compatibility – Generic Emission Standard – Part 1 Residential, Commercial and Light Industry** |
| **EN 50082-1:1997** | **Electromagnetic Compatibility – Generic Immunity Standard – Part 1 Residential, Commercial and Light Industry** |
| **EN 55022** | **Limits & Methods of Measurement of Radio Interference of Information Technology Equipment** |
| **EN 61000-3-2** | **Power Line Harmonics Requirements** |
| **EN 61000-3-3** | **Power Line Flicker Requirements** |
| **EN 61000-4-2** | **Electrostatic Discharge Procedures** |
| **EN 61000-4-3** | **Radiated Electromagnetic Field Procedures** |
| **EN 61000-4-4** | **Electrical Fast Transient/Burst Procedures** |
| **EN 61000-4-5** | **Surge Immunity Test Procedures** |
| **EN 61000-4-6** | **Conducted RF Immunity Test Procedures** |
| **EN 61000-4-11** | **Voltage Dips and Interruptions Test Procedures** |

This Declaration of Conformity applies to units manufactured on or after 1 July, 2001.

As of 1 July, 2001, this Declaration of Conformity is true and effective.

# contents


1. INTRODUCTION . . . . . 1
2. MODEL IDENTIFICATION . . . . . 2
3. SPECIFICATIONS . . . . . 3
4. OPTIONS . . . . . 4
5. INSTALLATION

   UNPACK . . . . . 5

   COIN BAGS / POWER CORD . . . . . 6

   POWER / INTERLOCK SWITCHES . . . . 7

   PRINTER PAPER. . . . . 8
6. OPERATOR CONTROL MODULE

   OVERVIEW . . . . . 9

   FUNCTION KEYS . . . . . 10

   ICONS . . . . . 11

   DISPLAY SCREENS

   HOME . . . . . 17

   HOME ALL CLEAR . . . . . 18

   FULL BAG DISPLAY . . . . . 19

   BAGSTOP ENTRY. . . . . 20

   BATCH HEADER SUMMARY. . . . . 21

   BATCH COIN SUMMARY . . . . . 22

   GRAND HEADER SUMMARY . . . . . 23

   GRAND COIN SUMMARY . . . . . 24

   BAG COUNT DISPLAY . . . . . 25
7. OPERATING THE SORTER

   APPLYING POWER. . . . . 26

   SETTING THE TIME / DATE . . . . . 27

   PROCESSING COIN . . . . . 29

   DISPLAYING QUANTITIES
   AND / OR TOTALS. . . . . 31

   ACCEPTING QUANTITIES
   AND / OR TOTALS. . . . . 38

# contents


7. OPERATING THE SORTER (CON'T)

CLEARING QUANTITIES AND / OR TOTALS . . . . . 39

WHEN YOU REACH A BAGSTOP . . . . 41

CHANGING THE BAGSTOP QUANTITY . . . . . 42

8. OPERATOR DISPLAY MESSAGES

INTRODUCTION . . . . . 44

COVER OPEN / COIN JAM . . . . . 44

RAM / ROM ERROR . . . . . 45

ILLEGAL KEY OR CLEAR SEQUENCE 46

CLEAN SENSOR . . . . . 47

COIN BAG PRESENCE . . . . . 48

NO ACCEPT WHILE COUNTING . . . . . 49

PRINTER BUSY . . . . . 50

COMMUNICATIONS ERROR. . . . . 51

9. PROGRAMMING

DEFAULT SETTINGS . . . . . 52

INITIALIZING CONTROL FOR INTERNAL PRINTER OPERATION. . . . 55

INITIALIZING CONTROL FOR EXTERNAL PRINTER OPERATION. . . 59

INITIALIZING CONTROL FOR REMOTE DISPLAY OPERATION . . . . . 62

PROGRAMMING KEY FUNCTIONS. . . 65

10. CIRCUIT PROTECTION . . . . . 92

11. SORTER CLEANING / JAM REMOVAL 93

12. SERVICE . . . . . 97

# overview

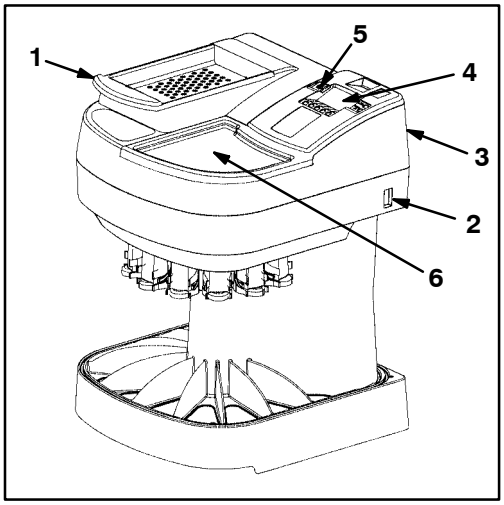



**FIGURE #1**
**SORTER DESCRIPTION**

The Mach 12 Coin Sorter and Counter is designed for ease of operation. Coins are sorted and counted at a rate of up to 6,000 coins per minute (depending on the coin mix). Both the denomination and quantity totals are registered on the Operator Control Module located on the front of the Sorter.

1. Inspection Pan

   Allows inspection of coin mix and removal of unwanted objects before coins enter the Sorting Area.

2. Power Switch

   Turns Main Power to Sorter on and off.

3. Operator Control Module

   Communications link between the Sorter and the operator. All Sorter operation is controlled here.

4. Display

   Visual communications link between the Sorter and the Operator.

5. Keylock

   Allows access to programming mode.

6. Access Cover (Work Surface)

   Convenient work space for operator.

   **Note:** Remove to raise Top Housing for access to Sorting Module and / or other internal components.

# model identification

| | | |
|---|---|---|
| 6420022 | USA / CANADA | – W / O PRINTER |
| 6420032 | USA / CANADA | – W / PRINTER |
| 6400033 | USA (650 / 900T) | – W / PRINTER |
| 6400111 | UK | – W / O PRINTER |
| 6400112 | UK | – W / PRINTER |
| 6400116 | FRANCE | – W / O PRINTER |
| 6400117 | FRANCE | – W / PRINTER |
| 6400121 | SPAIN | – W / O PRINTER |
| 6400122 | SPAIN | – W / PRINTER |
| 6400126 | AUSTRALIA | – W / O PRINTER |
| 6400127 | AUSTRALIA | – W / PRINTER |
| 6400131 | IRELAND | – W / O PRINTER |
| 6400132 | IRELAND | – W / PRINTER |
| 6400136 | NEW ZEALAND | – W / O PRINTER |
| 6400137 | NEW ZEALAND | – W / PRINTER |
| 6400141 | MEXICO | – W / O PRINTER |
| 6400142 | MEXICO | – W / PRINTER |
| 6400146 | GERMANY | – W / O PRINTER |
| 6400147 | GERMANY | – W / PRINTER |
| 6400151 | NETHERLANDS | – W / O PRINTER |
| 6400152 | NETHERLANDS | – W / PRINTER |
| 6400156 | POLAND | – W / O PRINTER |
| 6400157 | POLAND | – W / PRINTER |
| 6400161 | ITALY | – W / O PRINTER |
| 6400162 | ITALY | – W / PRINTER |
| 6400171 | BELGIUM | – W / O PRINTER |
| 6400172 | BELGIUM | – W / PRINTER |
| 6400175 | UAE | – W / O PRINTER |
| 6400176 | UAE | – W / PRINTER |
| 6400182 | GREECE | – W / PRINTER |
| 6400830 | USA (800 / 984T) | – W / PRINTER |

# specifications

| | | |
|---|---|---|
| Size; | Height . . . . . | 40 Inches (102 cm) |
| | Width . . . . . | 27 Inches (69 cm) |
| | Depth . . . . . | 28.25 Inches (72 cm) |
| | Weight . . . . . | 200 Pounds (90 kg) |
| Sorting Speed . . . . | Up to 6,000 Coins per Minute (depending on coin mix) | |
| Ambient (Room) Temperature. . . . . | | +77 Degrees Fahrenheit<br>+25 Degrees Centigrade |
| Voltage . . . . . | Compatible with most worldwide voltages and frequencies. | |
| | 100 – 240 VAC / 50 or 60 HZ, 6.3A | |
| Coin Diameter Capability. . . . . | | .640" (16.26 mm) Dia. (Min.)<br>1.467" (37.26 mm) Dia. (Max.) |
| Coin Thickness Capability. . . . . | | .039" (1 mm) (Minimum)<br>.118" (3 mm) (Maximum) |
| Inspection Pan Capacity . . . . . | | Approximately 5,000 Coins (18 mm) Dia. |
| Hopper Capacity . . . . . | | Approximately 5,000 Coins (18 mm) Dia. |

* Weight is approximate, will vary with options selected.

**⚠CAUTION**

THIS EQUIPMENT MUST BE GROUNDED FOR PROPER OPERATION. USE OF EXTENSION CORDS OR 3–2 ADAPTERS IS NOT RECOMMENDED. IF A 3–2 ADAPTER IS USED, THE GROUNDING WIRE OR TANG MUST BE CONNECTED TO THE BUILDING GROUND. FOR OPTIMUM SAFETY, THE POWER CORD SHOULD BE DISCONNECTED FROM THE POWER SOURCE BEFORE CLEANING OR SERVICING. THE SOCKET OR OUTLET SHOULD BE INSTALLED NEAR THE EQUIPMENT AND BE EASILY ACCESSIBLE.

# options

There are five (5) options available. Options are also packaged separately, complete with installation instructions, for installation at a later date.

A. MAGNET –– Attaches to Inspection Pan to prevent unwanted metallic objects from entering the Sorting Area.

B. REMOTE BATCH DISPLAY –– Allows others to observe the total as coins are sorted / counted.

C. PRINTER –– Provides a permanent record (audit trail) of all transactions.

D. SECURITY DOORS –– Provide security for coin bags when Sorter is not in use.

E. BAG SHELF SPACER –– Allows use of alternate sized coin bags.

# unpack

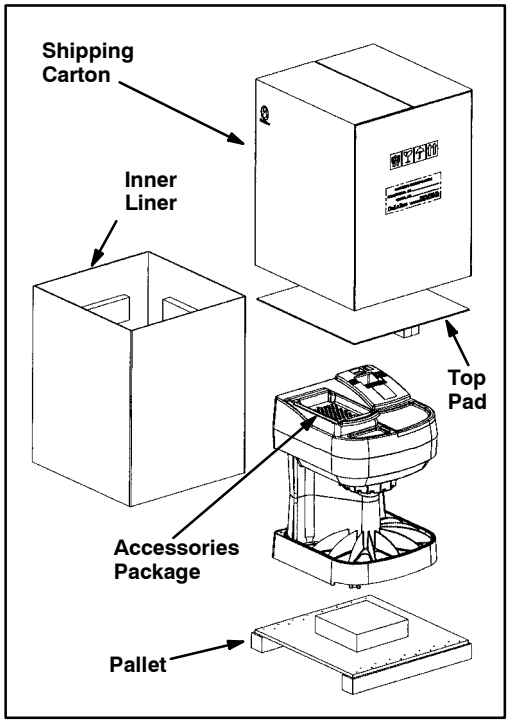



FIGURE #2
PACKAGING

The internal packaging is designed not only for protection during shipment but to allow an easy means of removal from the shipping container.

**⚠CAUTION**

THE SORTER WEIGHS APPROXIMATELY 200 POUNDS. FOLLOW THE UNPACKING INSTRUCTIONS TO AVOID DAMAGE TO THE SORTER OR PERSONAL INJURY.

1. Remove the Inner Liner and Top Pad shown in FIGURE #2.The Accessories Package (located in the Coin Hopper) may be removed at this time, if desired.
2. Referring to FIGURE #3, carefully roll the Sorter forward until the Front Casters are resting on the floor in front of the Pallet.
3. Raise the rear of the Sorter up slightly to clear the Support Block, and continue to roll the Sorter carefully forward to clear the Pallet. Lower the Sorter to the floor.

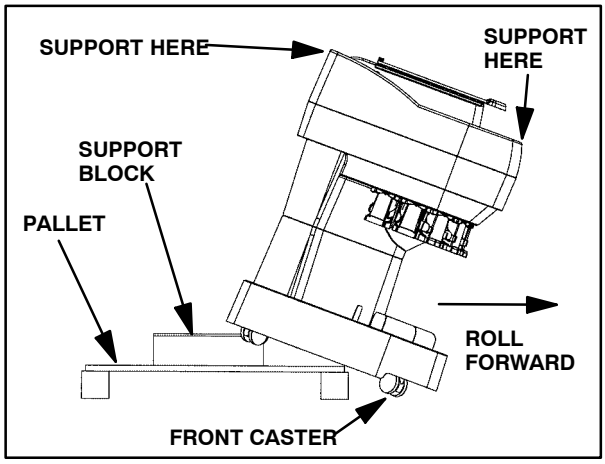



FIGURE #3
UNPACKING

**CHECK FOR SHIPPING DAMAGE**

The Sorter and all options were thoroughly tested after they were manufactured and carefully packaged when they left the factory.

**ANY DAMAGE THAT MAY HAVE BEEN DONE IN SHIPMENT SHOULD BE REPORTED TO THE CARRIER IMMEDIATELY, AND THE SHIPPING CARTON(S) AND PACKAGING RETAINED FOR INSPECTION, IF NECESSARY.**

**CHECK FOR MISSING PARTS**

Compare the items received against the original order. Notify your Sales / Service Representative of any discrepancies.

# coin bags / power cord

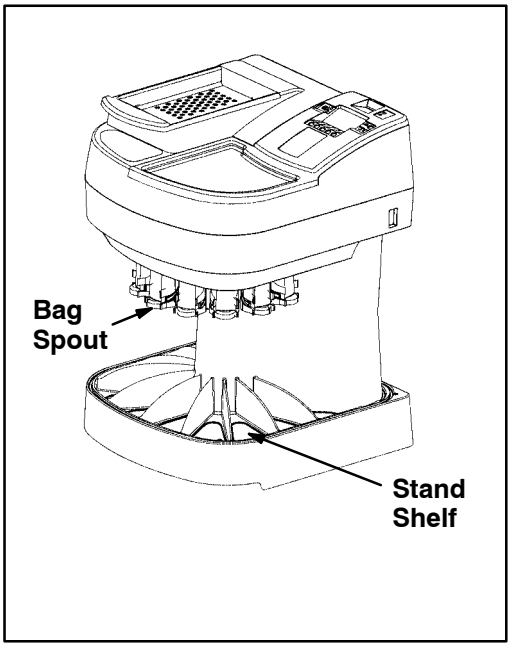



**FIGURE #4**
**COIN BAG INSTALLATION**

To install a Coin Bag, lift the appropriate Spout, slip the Bag over the Spout, and, while holding the bag tightly around the top of the Spout, return the Spout to home position.

The Coin Bag must rest on the Stand Shelf to support the weight of the coin. If, as the bag fills, it begins to stretch and hang from the Bagging Spout, the use of the optional Shelf Spacer will be required for proper bag support.

**Note:** To prevent coin spillage, fold the coin bag tops toward the front–center of the sorter when using the security doors.

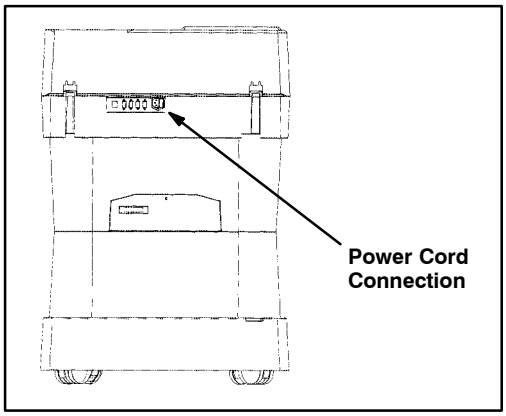



**FIGURE #5**
**POWER CORD CONNECTION**

Check the Power Cord supplied with the Sorter to ensure compatibility with local requirements. If a different plug connection is required, obtain the correct Power Cord assembly locally.

# power / interlock switches

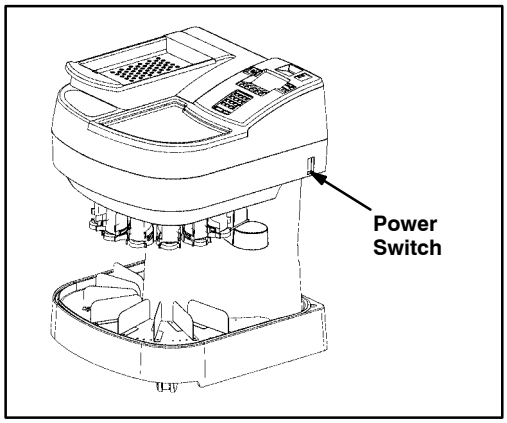



**FIGURE #6**
**POWER SWITCH**

Be sure the Power Switch (See FIGURE #6) is in the OFF position. Connect the Sorter end of the Power Cord as shown in FIGURE #5, and the opposite end to a grounded AC outlet of the appropriate voltage.

Switch the power on to begin programming or operation.

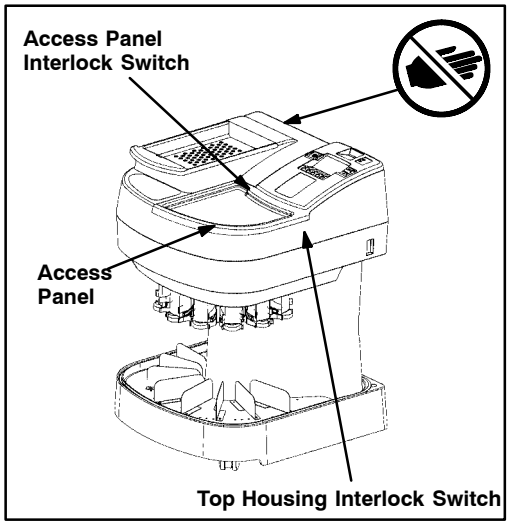



**FIGURE #7**
**INTERLOCK SWITCHES**

There are two Interlock Switches, located inside the Sorter, that will stop the Sorting Motor when the Access Panel is pulled forward or the Top Housing is raised.

**⚠CAUTION**

THESE INTERLOCK SWITCHES ARE FOR YOUR PROTECTION AND SHOULD NOT BE REMOVED OR CIRCUMVENTED IN ANY WAY.

**⚠CAUTION**

DO NOT PLACE HANDS IN FUNNEL AREA WHEN SORTER IS OPERATING AND ACCESS PANEL IS FORWARD.

NEVER ALLOW LONG HAIR OR LOOSE CLOTHING, (TIES, ETC.) NEAR FUNNEL AREA WHEN SORTER IS OPERATING.

# paper roll / printer ribbon

**PRINTER RIBBON**

Install (replace) the Paper Ribbon as follows:

Pull the Access Panel ( see FIGURE #7 ) forward and lift the Keyboard. A self–contained bracket / spring will retain it in position.

Observe the Printer Mechanism.

The bottom portion is the driver and the top portion contains the printer ribbon.

Remove the top portion by carefully pulling straight forward.

Install the new ribbon in reverse order, making sure the audit trail ( printer ) tape is located above the printer ribbon.

If necessary, turn the adjusting screw on the left side of the printer ribbon until the ribbon is tight.

Return the Printer Mechanism to its upright position.

Lower the the Keyboard, while feeding the leading edge of the paper through the Cutoff Slot.

**PAPER ROLL**

Install (replace) the Paper Roll as follows:

Pull the Access Panel ( see FIGURE #7 ) forward and lift the Keyboard. A self–contained bracket / spring will retain it in position.

Tilt the Printer Mechanism forward, and remove the old Paper Roll Core.

Remove the Printer Ribbon as discussed to the left.

Install the new paper roll between the retainers so that the paper feeds from the top of the roll as shown in ( FIGURE #8 ).

Route the leading edge of the paper over the top of the arched metal bracket and down into the slot at the top of the Printer Mechanism.

Press the Paper Advance Key on the Keyboard (see FIGURE #9 ) to advance the paper.

Replace the Printer Ribbon as discussed to the left.

Return the Printer Mechanism to its upright position.

Lower the the Keyboard, while feeding the leading edge of the paper through the Cutoff Slot.

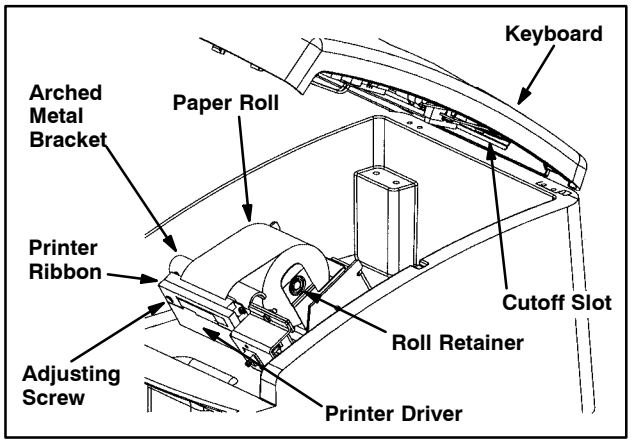



**FIGURE #8**
**PRINTER PAPER / RIBBON**
**(RETAINER BRACKET NOT SHOWN FOR CLARITY)**

# overview

The Operator Control Module is the interface between the Operator and the Sorter. All Sorter functions are controlled here. Each component and function key is identified in the figure below. A complete description of each Key, Icon and Display Screen is included on the following pages.

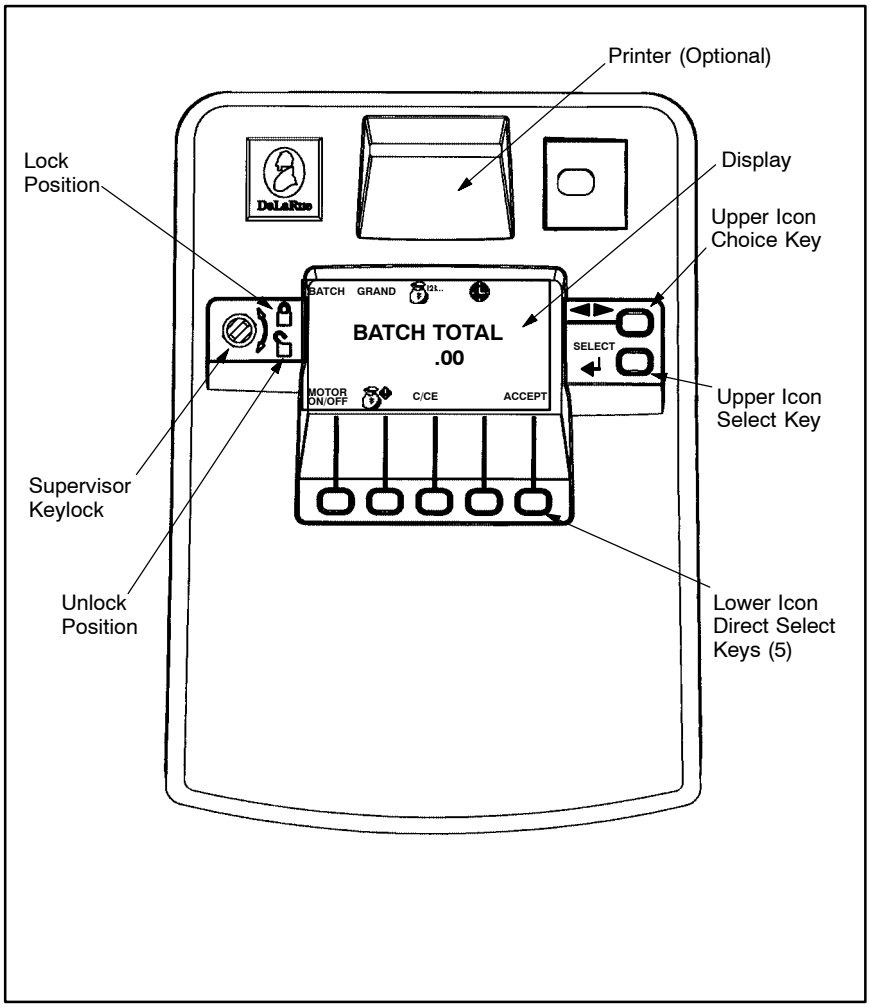



**FIGURE #9**
**OPERATOR CONTROL MODULE**

# function keys

**UPPER ICON CHOICE**

Selects counting mode (Batch / Grand), Bag Count or Clock Icons.

**UPPER ICON SELECT**

Changes the Display Screen as determined by the UPPER ICON CHOICE Key.

**LOWER ICON DIRECT SELECT (HOME SCREEN)**

**BAGSTOP**

Changes the Display to allow selection or change of the bagstop quantities.

**MOTOR ON / OFF**

Starts / Stops the Sorting Motor.

**ACCEPT**

Transfers totals to next memory level.

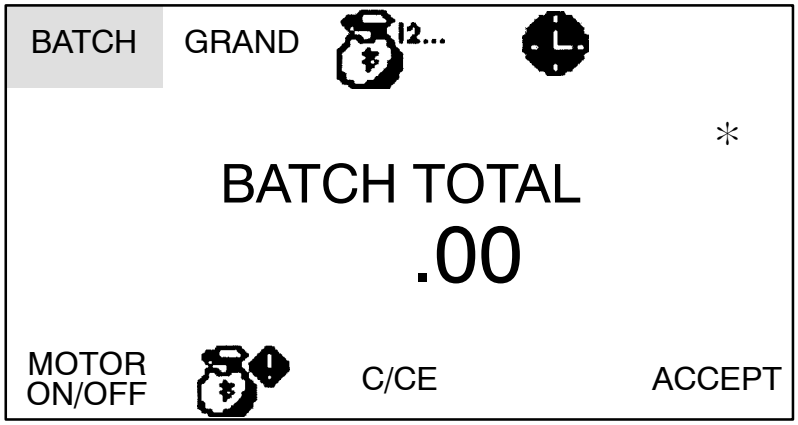
**C/CE**

Clear / Clear Error function.

**NO ICON**

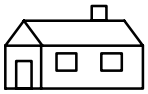
Reserved for future use.

# icons

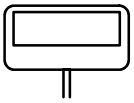



| | | |
|---|---|---|
| | BAG COUNT | This icon represents the Display that indicates the number of coins in each partially filled bag. This Display can be in units or dollars, as selected by the operator, but will be the same as the bagstop selection. |
| | CLOCK | This icon represents a clock and is shown on the HOME SCREEN only. Accessing this icon allows entry of time and date. A detailed procedure for setting the time / clock is descriibed at the beginning of the “operating the sorter” section of this Guide. |
| | MOTOR RUN SYMBOL | This symbol is displayed whenever the Sorting Motor is running. It is displayed in the upper right corner of the HOME SCREEN. |

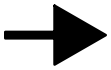
# icons

| | | |
|---|---|---|
| | MOTOR STOP | This icon represents the option of enabling the 7 second auto–stop for the motor. |
| | BAGSTOP | This icon represents the Display used to set the number of coins per bag, displayed in units or dollar value, as determined by the operator. |
| | STATION | This icon represents the nine possible coin sorting stations. The filled circles represent the active coin stations. An arrow pointing to a particular station is used to identify the station for full bag, clean sensor, coin value programming etc. |
|  | HOME | This icon represents a Home (House) and is located in the lower right corner of each screen except the HOME SCREEN. Pressing this icon once returns the Display to the HOME SCREEN. |

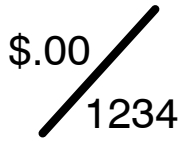
# icons

| | | |
|---|---|---|
| | PRINTER | This icon represents a Printer, and allows a quick method of programming the Control to output data in the Printer format. |
|  | REMOTE BATCH DISPLAY | This icon represents a Remote Batch Display and allows a quick method of programming the Control to output data in the Remote Batch Display format. |
| | DOWN ARROW | This icon allows the operator to highlight the next choice below the present choice. When the highlight cycles past the last item, it will revert to the top of the list. |
| | UP ARROW | This icon moves the highlighted selection to the choice directly above the present choice. When the highlight cycles past the top item, it will revert back to the bottom item. |

# icons

| | | |
|---|---|---|
|  | RIGHT ARROW | This icon moves the highlighted selection to the right of the present choice. Cycling the highlight past the last right choice, the highlight will revert back to the far left choice. |
| | DECIMAL PT/ COMMA | This icon allows the operator to choose between using a decimal point or a comma to display the denominational totals. |
| | NO BAGSTOP | This icon allows the operator to program the Control to enable or disable the bagstopping of all coins. |
| | HIGHLIGHT CHOICE | This icon is a Visual Indication of which choice is being considered. |

# icons

| | | |
|---|---|---|
|  | VALUE OR UNIT COUNT | This icon allows the operator to program whether bagstops and bagcounts are displayed in unit or value. |
| **RS232** | INTERFACE | This icon allows the operator to program the parameters for the four RS232 ports. These parameters include Baud, Parity, Stop Bits, Formats and Handshaking. |
| **PRIOR PAGE** | PRIOR PAGE | This icon allows the operator to choose the previous display of the information shown. |
| **NEXT PAGE** | NEXT PAGE | This icon allows the operator to choose additional Displays of the current information. |

# icons

| | | |
|---|---|---|
| DIGIT ↓ | INCREMENT DIGIT VALUE | This icon allows the operator to decrease the value of the highlighted digit. Cycling past the value of 9 will revert back to the value of 0. |
| ← DIGIT | INCREMENT DIGIT POSITION | This icon allows the operator to select the next digit position for programming of a number. The Icon will cycle to the left until it reaches the highest digit and then revert to the lowest digit. |
| DIGIT ↑ | INCREMENT DIGIT VALUE | This icon allows the operator to increase the value of the highlighted digit. Cycling past the value of 9 will revert back to the value of 0. |
| | PRINTOUT FORMATS | This icon represents the screen used for selecting printout formats. These formats are length, number of prints and order of printout. |

# display screens

## home screen

The HOME SCREEN is the screen from which all other screens are displayed by using the appropriate key. It is also the screen to which you return to from all other screens. The HOME SCREEN displays the Batch total of all entries, a MOTOR RUN SYMBOL and all ICONS necessary to operate the Sorter.

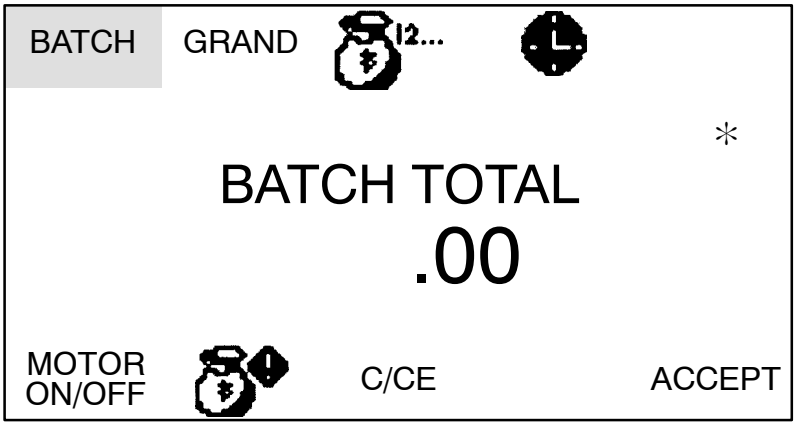



**FIGURE #10**
**HOME SCREEN**

# display screens

## home all clear screen

This screen indicates that all totals have been cleared by using the Power–Up clear sequence (hold the C/CE Key down while turning the Power ON).

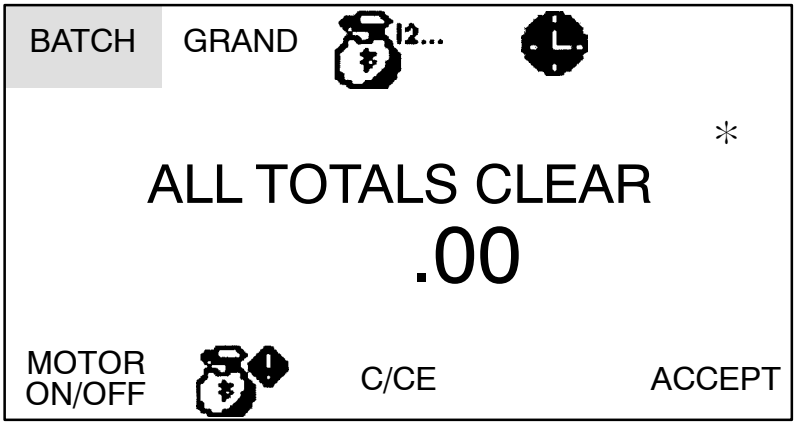



**FIGURE #11**
**HOME ALL CLEAR SCREEN**

**Note:** This message will self–clear in approximately 3 seconds.

# full bag display screen

This screen indicates that the denomination shown has reached a full bag quantity.

**Note:** If the bagstop quantity is to be changed, make the change before pressing the MOTOR key.
Instructions for changing the bagstop quantity are described later in this guide.

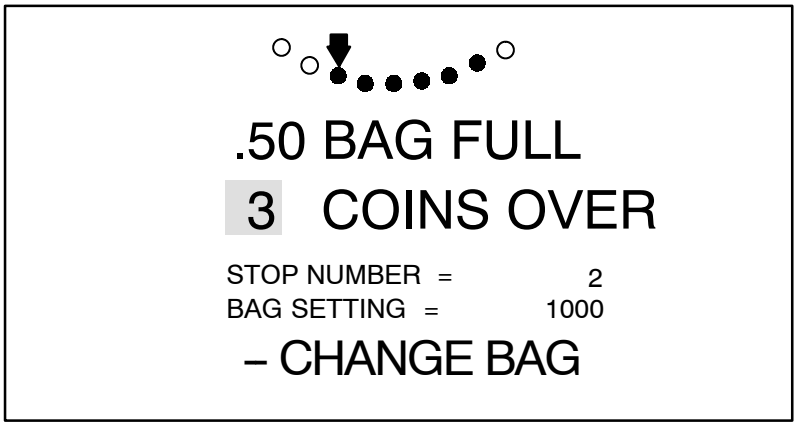



**FIGURE #12**
**FULL BAG DISPLAY SCREEN**

This screen indicates:

A. The denomination that has reached a full bag quantity.

B. The number of coins over (if any) the bagstop setting.

C. The number of bagstops that have occurred.

D. The current bagstop setting.

# display screens

## bagstop entry screen

This screen allows the operator to enter the bagstop quantity desired for each sorting station. The amount entered may be in units or dollars, depending on the option selected in the Programming mode when the Sorter is installed. In addition, the number of stops at a desired quantity is selectable and may be changed at operator discretion.

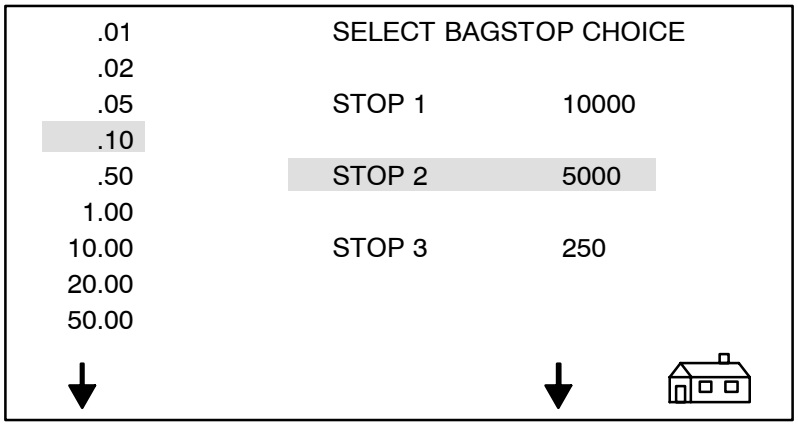



**FIGURE #13**
**BAGSTOP ENTRY SCREEN**

## batch header summary screen

This screen displays Batch Total and ID information for the current batch. Press the NEXT PAGE Icon Key to view the current Batch Coin Summary Screen.

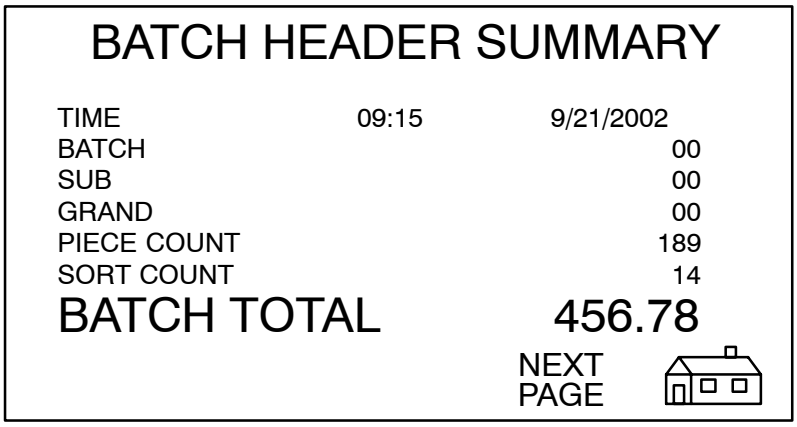



**FIGURE #14**
**BATCH HEADER SUMMARY SCREEN**

**Note:** In the figure above:

Piece count refers to the total number of coins sorted since the last grand total was cleared.

Sort count refers to the number of batches sorted since the last grand total was cleared.

# display screens

## batch coin summary screen

This screen displays each coins' denomination total, and the total of all coins sorted for the current batch.

Press the PRIOR PAGE Icon Key to view the BATCH HEADER SUMMARY Screen.

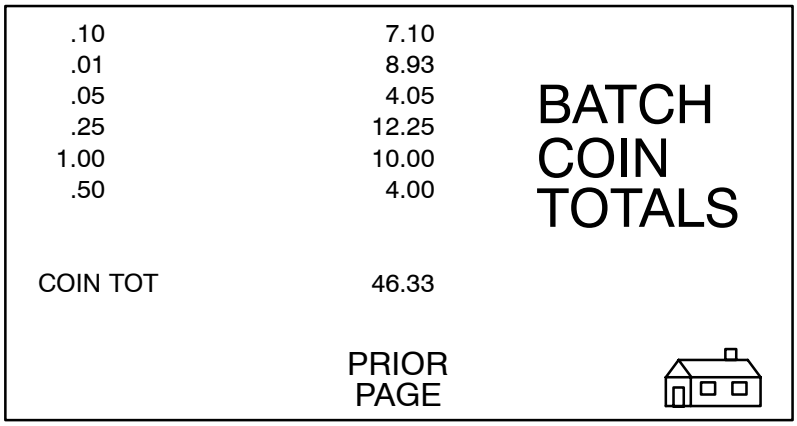



**FIGURE #15**
**BATCH COIN SUMMARY SCREEN**

## grand header summary screen

This screen displays GRAND ID and Total information. Press the NEXT PAGE Icon Key to view the current GRAND COIN SUMMARY Screen.

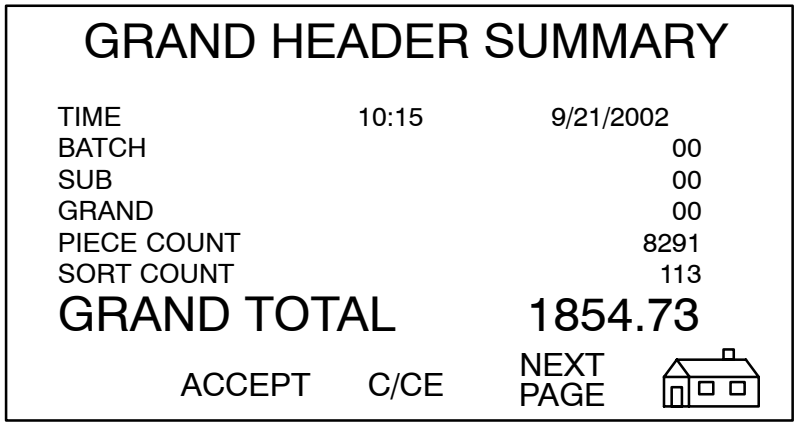



**FIGURE #16**
**GRAND HEADER SUMMARY SCREEN**

# display screens

## grand coin summary screen

This screen displays each coins' denomination, and the total of all coins sorted for the current Grand Total.

Press the PRIOR PAGE Icon Key to view the GRAND HEADER SUMMARY Screen.

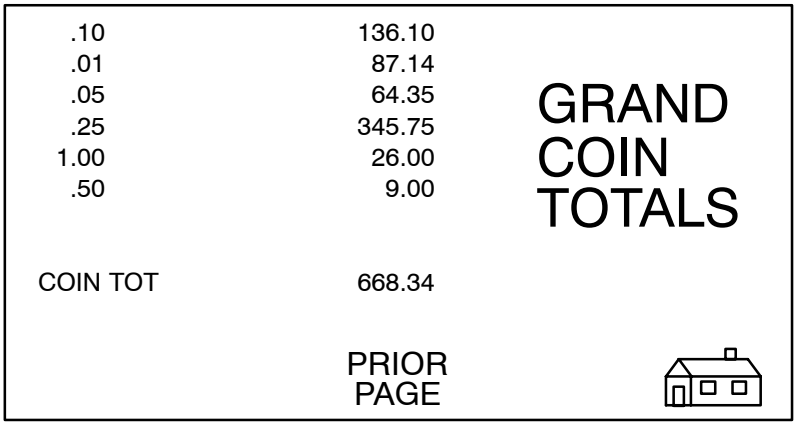



**FIGURE #17**
**GRAND COIN SUMMARY SCREEN**

# bag count display screen

This screen displays the current Bag Count information for each denomination, shown in units or dollars. Both total and individual bag counts are displayed. Individual bag counts may be added to or cleared in this screen.

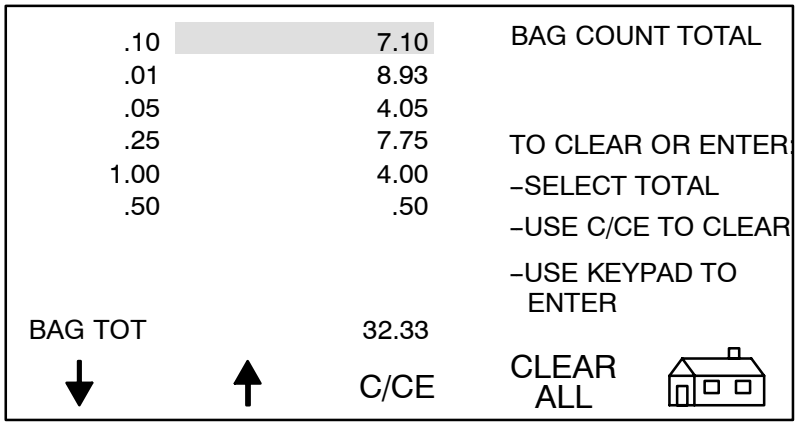



**FIGURE #18**
**BAG COUNT DISPLAY SCREEN**

**Note:** Refer to section #9, programming, to select a display of units or value.

# applying power

Switch the Main Power Switch (see FIGURE #1) to the ON position to apply power to the Operator Control Module.

The Display will show:

**FIGURE #19**
**POWER–UP DISPLAY**

The Display will retain this information for approximately 3 seconds and then revert to the HOME SCREEN shown in FIGURE #10.

**Note:** The purpose of this screen is to inform the operator (or service technician) which level software is installed in the Sorter's memory.

xxxxx = part number of prom currently used in control.

# setting the time / date

## to set / change the time

From the HOME SCREEN, cycle the UPPER ICON CHOICE Icon Key until the CLOCK Icon is highlighted.

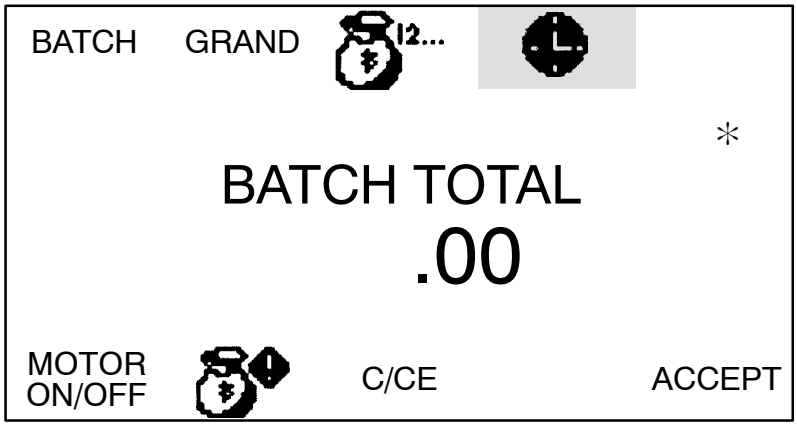



**FIGURE #21**
**HOME SCREEN**

Press the UPPER ICON SELECT Icon Key once.

The Display will show:

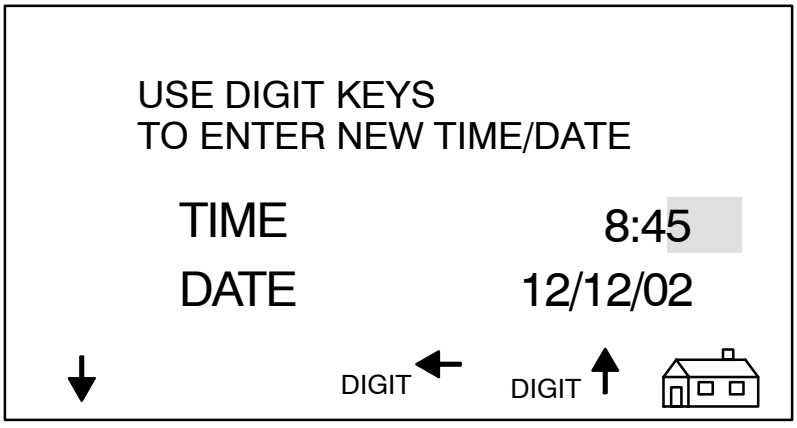



**FIGURE #20**
**TIME / DATE SCREEN**

# setting the time / date

## to set / change the time

Use the UP DIGIT Key to cycle the highlighted digit to the required value.

The Display will show:

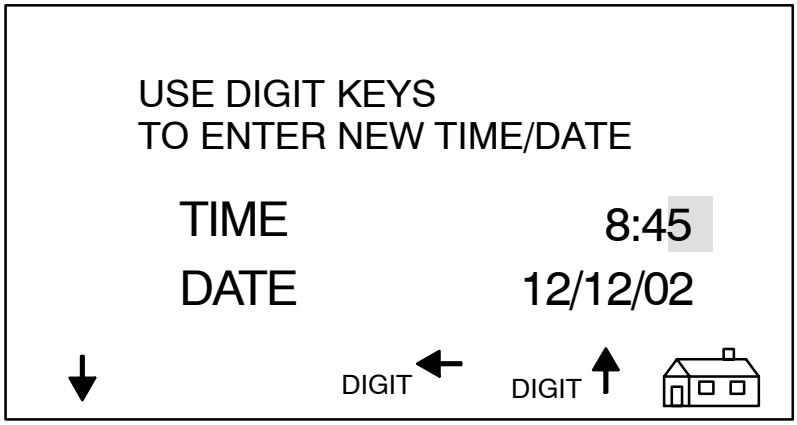



**FIGURE #22**
**TIME / DATE SCREEN**

Use the LEFT DIGIT Key to select the next digit to be changed.

The Display will show:

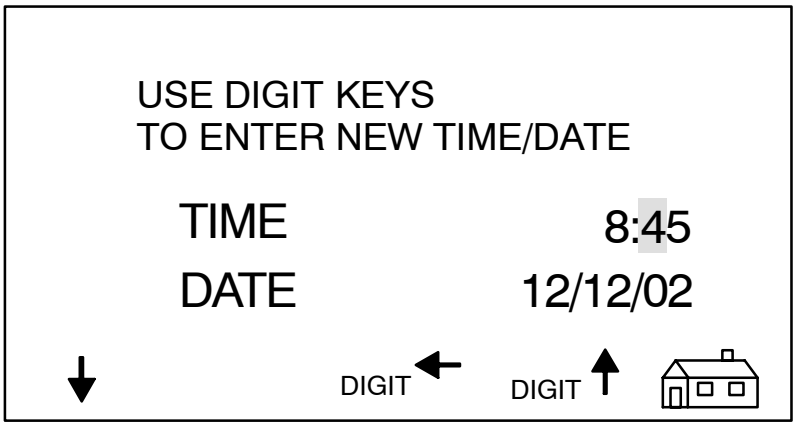



**FIGURE #23**
**TIME / DATE SCREEN**

When all the desired changes have been made, press the HOME Key and the clock will be set.

# processing coin

1. Place the coins for the first batch in the Inspection Pan and remove any unwanted objects.

   **Note:** All Coin Bags must be in position for the Sorter to operate. If one or more bags are not properly installed a display message will appear indicating which station is in error. Install a Coin Bag at that station. The Display will return to the HOME SCREEN.

2. Press the MOTOR ON / OFF Key on the Control to start the Sorting Motor.

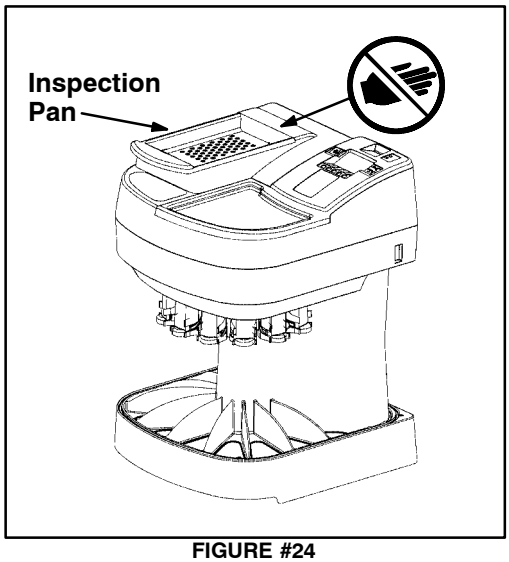



**FIGURE #24**
**INSPECTION PAN**

3. Lift and tilt the Inspection Pan to transfer the coins into the Sorting Area. The (optional) magnet will catch metal (metallic) items such as slugs, washers, paper clips, etc., that should not enter the Sorter.

4. When the sorting is complete, press the MOTOR ON / OFF Key on the Control to stop the Sorting Motor. (The Sorting Motor stops automatically approximately seven (7) seconds after the last coin has been processed if left unattended.)

**⚠CAUTION**

DO NOT PLACE HANDS IN FUNNEL AREA WHEN SORTER IS OPERATING AND INSPECTION PAN IS FORWARD.

NEVER ALLOW LONG HAIR OR LOOSE CLOTHING, (TIES, ETC.) NEAR FUNNEL AREA WHEN SORTER IS OPERATING.

# processing coin con't...

**Note:** The sorter can be programmed to run continuously if desired.

Complete programming instructions are described later in this guide.

5. The total batch amount for the coins sorted will appear on the HOME SCREEN. Press the ACCEPT Key on the Control to add the Batch Total to the Grand Total. An audit trail (printout) will print the Batch Total information if a Printer is utilized.

   **Note:** If the batch total does not print properly, or does not space (advance) the tape properly after printing, the printer may not be properly initialized.

   Instructions for proper printer initialization are contained in the printer user manual.

6. Repeat Steps #1 through #5 for the second and all subsequent batches.

   All additional batch functions are described in detail on the following pages.

7. When all Batch Totals have been processed, press the UPPER ICON CHOICE Key to highlight the GRAND Icon.

   Press the UPPER ICON SELECT Key once to display the current Grand total.

   Press the ACCEPT Icon Key to print the current Grand Total (if a Printer is utilized).

   **Note:** If it is desired to print and clear the grand total information, press the GRAND Key, then press the C/CE Key, wait 2 seconds, then press the ACCEPT Key.

# displaying quantities and / or totals

## display batch total

The Batch total information is displayed on the HOME SCREEN.

The HOME SCREEN may be accessed from any other screen by pressing the HOME Icon Key ( ).

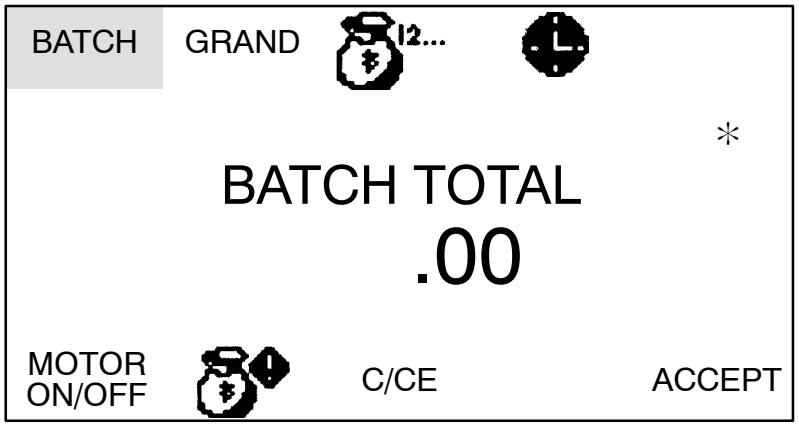



**FIGURE #25**
**HOME SCREEN**

# displaying quantities and / or totals

## display grand total

1. From the HOME SCREEN, cycle the UPPER ICON CHOICE Key until the GRAND Icon is highlighted.

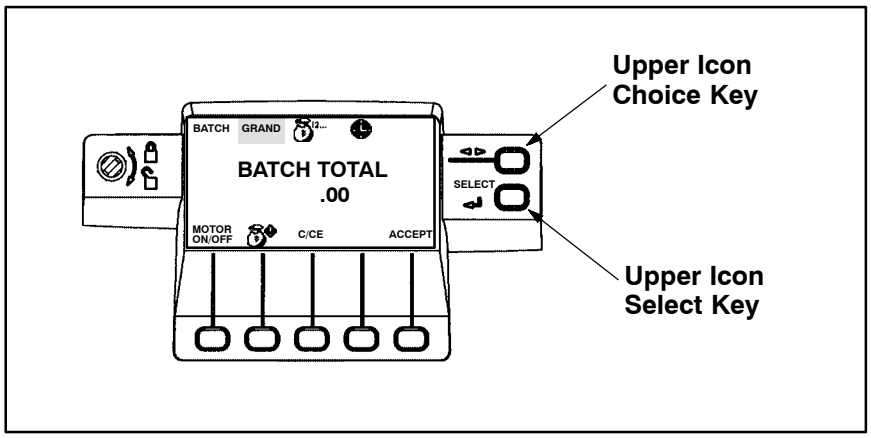



**FIGURE #26**
**HOME SCREEN**

2. Press the UPPER ICON SELECT Key.
3. The Display will show:

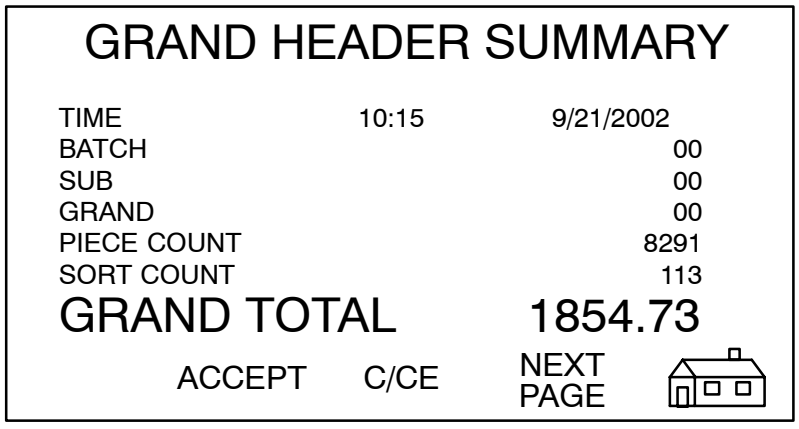



**FIGURE #27**
**GRAND HEADER SUMMARY SCREEN**

# displaying quantities and / or totals

## display batch or grand coin totals

1. From the HOME SCREEN, cycle the UPPER ICON CHOICE Key until the desired Batch or Grand Icon is highlighted.

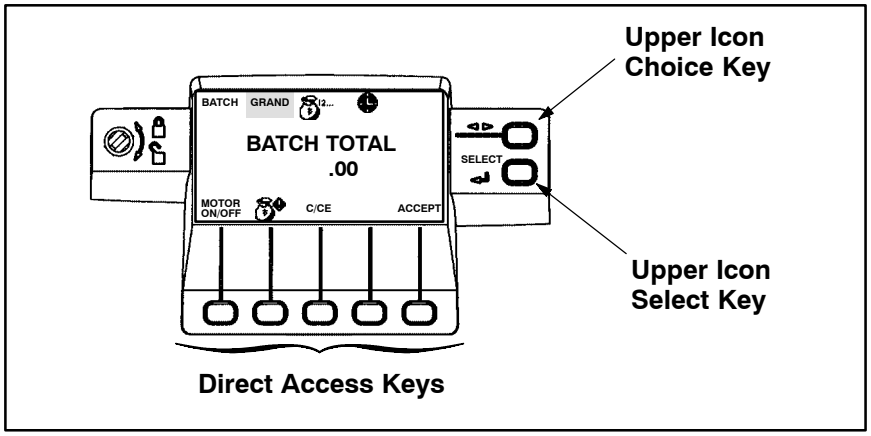



**FIGURE #28**
**HOME SCREEN**

2. Press the UPPER ICON SELECT Key.
3. The Display will now show the desired Batch or Grand HEADER SUMMARY screen. The Grand HEADER SUMMARY Screen is shown in FIGURE #29.

# displaying quantities and / or totals

## display batch or grand coin totals

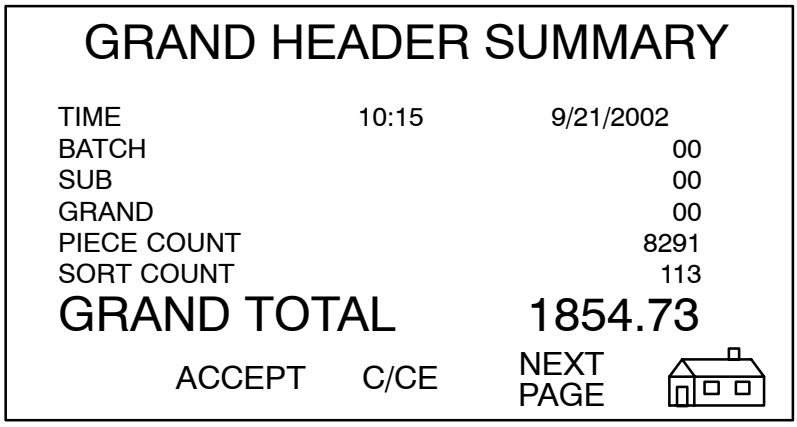



**FIGURE #29**
**GRAND HEADER SUMMARY SCREEN**

4. Press the NEXT PAGE Icon Key.
5. The Display will now show each coin total and a total of all coins for the selected Batch or Grand coin totals.

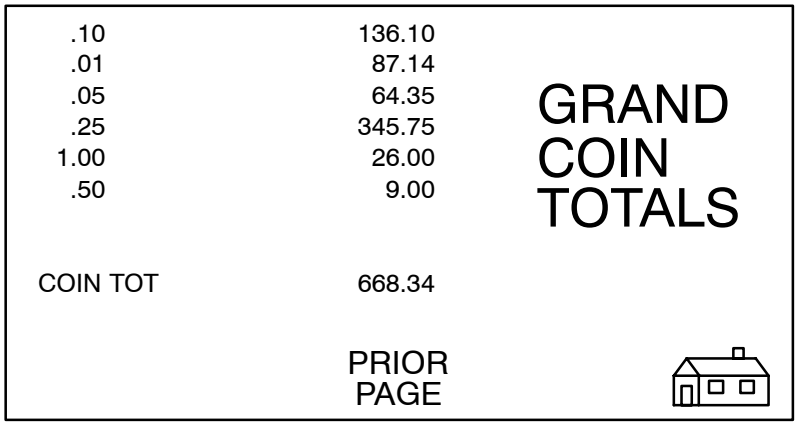



**FIGURE #30**
**GRAND COIN SUMMARY SCREEN**

# displaying quantities and / or totals

## display bag count summary

1. From the HOME SCREEN, cycle the UPPER ICON CHOICE Key until the BAG COUNT Icon ( ) is highlighted.

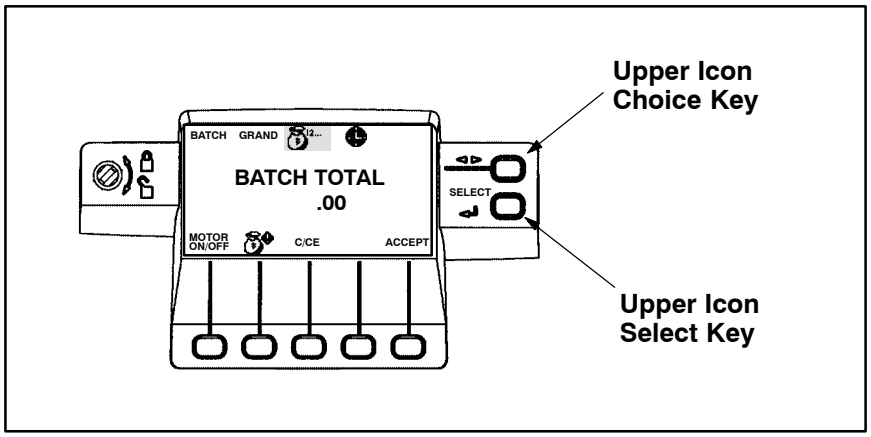



**FIGURE #31**
**HOME SCREEN**

2. Press the UPPER ICON SELECT Key.
3. The Display will show a summary of all partial bag totals for each coin plus a total of all partial bags. Refer to FIGURE #32.
4. The totals will be displayed in units or value as selected by the operator.

   **Note:** Refer to the programming instructions later in this guide to select a display of units or value.

# displaying quantities and / or totals

## display bag count summary

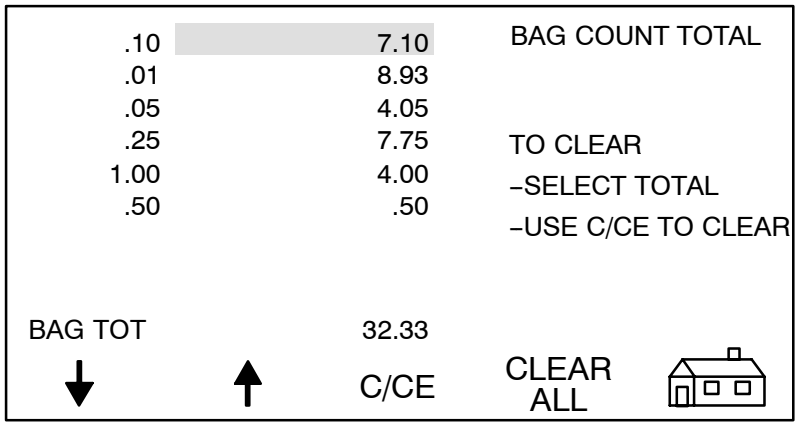



**FIGURE #32**
**BAG COUNT DISPLAY SCREEN**

# displaying quantities and / or totals

## display bagstop settings

1. From the HOME SCREEN, press the BAG-STOP ( ) Lower Direct Access Key.

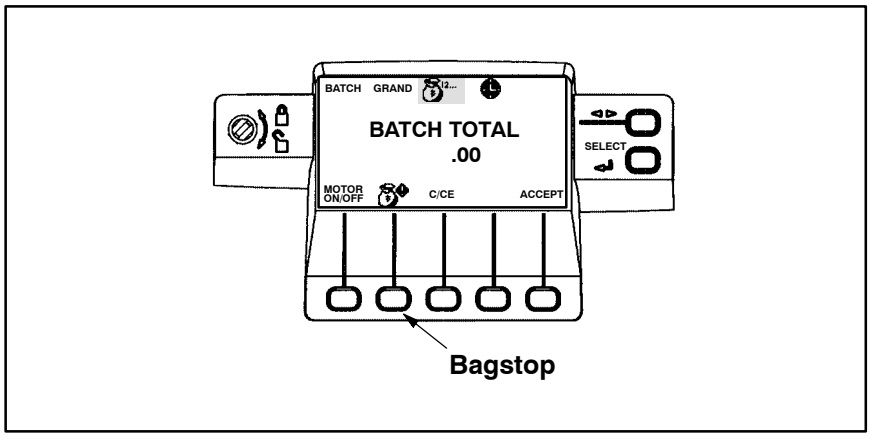



**FIGURE #33**
**HOME SCREEN**

2. The Display will show a summary of each coin with its three corresponding bagstop settings.

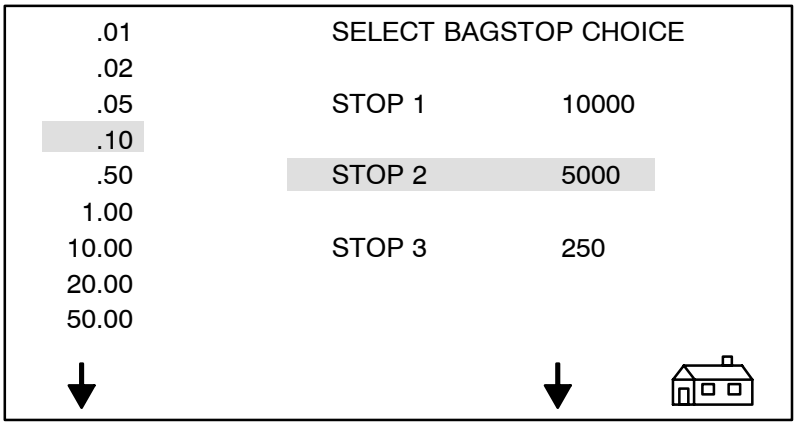



**FIGURE #34**
**BAGSTOP ENTRY SCREEN**

# accepting quantities and / or totals

**Note:** Each time a batch or grand total is accepted an audit trail will print if the printer option is utilized.

**Note:** To accept a batch or grand total, that total must be displayed. Refer to the previous pages for detailed instructions to display totals. Listed below are abbreviated instructions to accept those totals.

1. Batch ACCEPT
   With the Display in the HOME SCREEN mode, press the ACCEPT Key once. The BATCH TOTAL is cleared, and the Control remains in the BATCH mode. The BATCH TOTAL is added to the GRAND TOTAL.

2. Grand ACCEPT (All Grand Totals remain)
   Cycle the UPPER ICON CHOICE Key to highlight the “Grand” Icon in the HOME SCREEN. Press the UPPER ICON SELECT Key to enter the Grand Mode. Press the ACCEPT Key once. The GRAND TOTAL remains on the Display. To clear the Display, refer to “Clearing Quantities and / or Totals” on the following pages. The GRAND TOTAL can be accepted only if the BATCH and SUB TOTALS are zero.

   **Note:** The Printer must be allowed to finish the print cycle before attempting to accept a coin total or an operator message will appear. Refer to Operator Display Messages for additional information.

# clearing quantities and / or totals

**Note:** To clear a batch or grand total, that total must be displayed. For detailed instructions to display totals, refer to the beginning of section #7. Listed below are abbreviated instructions to clear totals.

**Note:** Always double–check your need to clear. Quantities cannot be recalled!

The CLEAR function is used to remove information from memory.

1. Clear Batch Total

   a. Display the HOME SCREEN.

   b. Press the C/CE Key (the Display MUST be allowed to flash for two seconds).

   **Note:** The Clear Batch (Grand) Total may be aborted by pressing the UPPER ICON SELECT Key prior to pressing the C/CE Key a second time.

   c. Press the C/CE Key again (the Display resets to zero, resets all batch totals).

   **Note:** If a batch total is cleared rather than accepted, the dollar amounts are not transferred to grand totals.

2A. Clear Grand Total (without Audit Trail Printout)

   a. Select the GRAND Icon on the HOME SCREEN. The Display will show the GRAND HEADER SUMMARY screen.

   b. Press the C/CE Key (the Display MUST be allowed to flash for two seconds).

   c. Press the C/CE Key again (the Display resets to zero, resets all grand totals).

   **Note:** The Control can be programmed to clear all partial counts also. Refer to the Programming section later in this Guide for complete instructions.

# clearing quantities and / or totals

2B. Clear Grand Total (with Audit Trail Printout)

a. Select the GRAND Icon on the HOME SCREEN. The Display will show the GRAND HEADER SUMMARY screen.

b. Press the C/CE Key (the Display MUST be allowed to flash for two seconds).

c. Press the ACCEPT Key (the Display re-sets to zero, resets all grand totals).

**Note:** The Control can be programmed to clear all partial counts also. Refer to the Programming Section later in this Guide for complete instructions.

3. Clear Individual Bag Counts

a. Select the BAG COUNT Icon Key ( ) on the HOME SCREEN. The Display will show the Bag Count totals.

b. Cycle the DOWN ARROW Icon Key ( ) to highlight the individual bag count total to be cleared.

c. Press the C/CE Key (the Display MUST be allowed to flash for two seconds).

d. Repeat steps B and C to clear additional individual bag count totals.

4. Clear All Bag Counts

a. Select the BAG COUNT Icon Key ( ) on the HOME SCREEN. The Display will show the Bag Count totals.

b. Press the CLEAR ALL Key to clear all bag count totals.

# when you reach a bagstop

The Sorter will stop when any of the coin denominations being sorted reaches a predetermined bagstop amount.

A. The Display will indicate which Sorting Station has reached a bagstop, and the number of coins (if any) over the bagstop quantity.

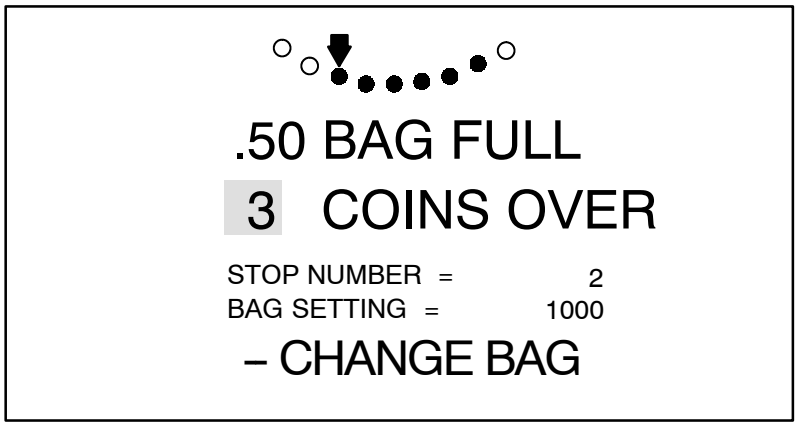



**FIGURE #35**
**FULL BAG DISPLAY SCREEN**

B. Exchange the Coin Bag.

C. Place the overage (if any) in the new bag.

D. Press the MOTOR ON / OFF Icon Key. The Display will automatically revert to the HOME SCREEN when the Coin Bag is exchanged.

1. If a second (or more) bagstop was reached, the Display will show that coin's denomination, and the number of coins (if any) over the bagstop quantity. Repeat steps "B – D".

2. When there are no more stations at bagstop, the Display will return to show the Batch Total on the HOME SCREEN and the Sorting Motor can be started by pressing the MOTOR Key.

# changing the bagstop quantity (not at bagstop)

Bagstop quantities may be set (reset) at any time the sorter is at rest (no counting / sorting).

1. Press the MOTOR ON / OFF Key on the Control to stop the Sorting Motor.
2. Press the direct access BAGSTOP Icon Key ( ). The Display will show the bagstop settings for all coins.

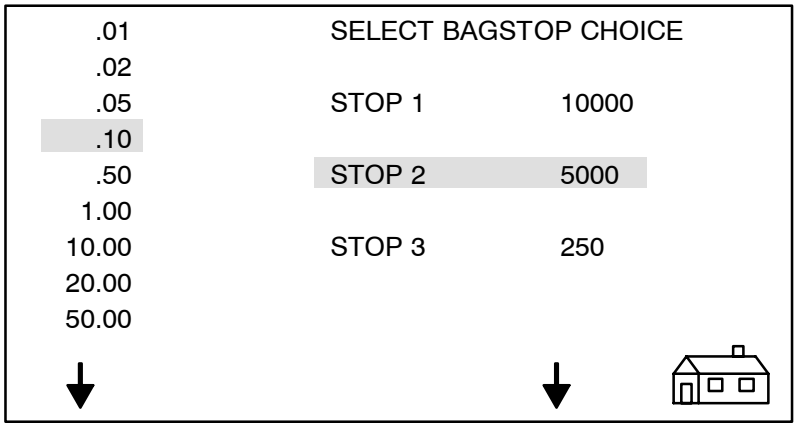



**FIGURE #36**
**BAGSTOP ENTRY SCREEN**

3. Cycle the bagstop (left) DOWN ARROW Icon Key ( ) to highlight the desired coin value.
4. Cycle the RIGHT DOWN ARROW Icon Key ( ) to select one of the three bagstop choices listed.

   **Note:** If quantities are changed during coin processing, it is important that the number of coins currently in the coin bag must be less than the new bagstop quantity. Check (and clear if necessary) the bag count quantity of the selected coin before selecting the new bagstop setting, then proceed as follows:

5. Press the HOME Icon Key ( ) to return to the HOME SCREEN.
6. Press the MOTOR ON / OFF Key to start the Sorting Motor.

# changing the bagstop quantity (at bagstop)

BAGSTOP QUANTITIES MAY BE SET (RE-SET) AT ANY TIME THE SORTER REACHES A BAGSTOP.

1. Exchange the Coin Bag at the location that has reached the bagstop.
2. Press the BAGSTOP Icon Key ( ). The Display will show the bagstop settings for each selected coin.

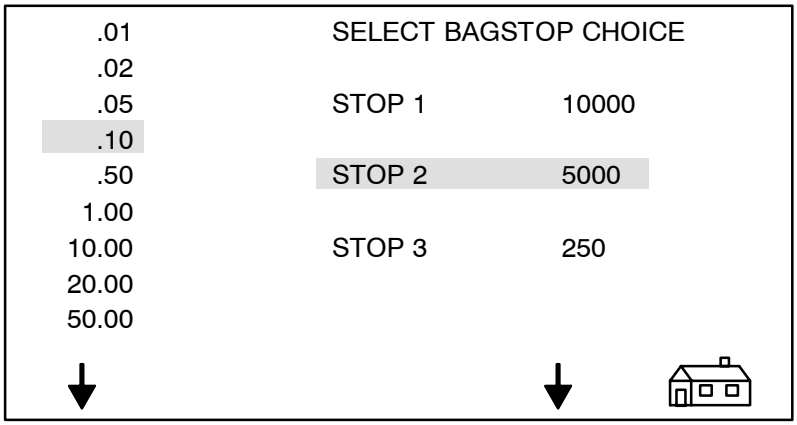



**FIGURE #37**
**BAGSTOP ENTRY SCREEN**

3. Cycle the bagstop (left) DOWN ARROW Icon Key ( ) to highlight the desired coin value.
4. Cycle the RIGHT DOWN ARROW Icon Key ( ) to select one of the three bagstop choices listed.
5. Place any overage from the previous bag into the new bag.
6. Press the HOME Icon Key ( ) to return to the HOME SCREEN.
7. Press the MOTOR ON / OFF Key to start the Sorting Motor.

# cover open / coin jam

## Introduction

Should the Sorter stop for any reason, observe the Display.

One of several error messages will be displayed.

Locate and eliminate the problem and continue operation.

# ram / rom error

A problem has occurred in the electronics of the Sorter. Follow instructions shown on screen. If the problem persists, disconnect the Sorter from power and contact your Authorized Service Representative.

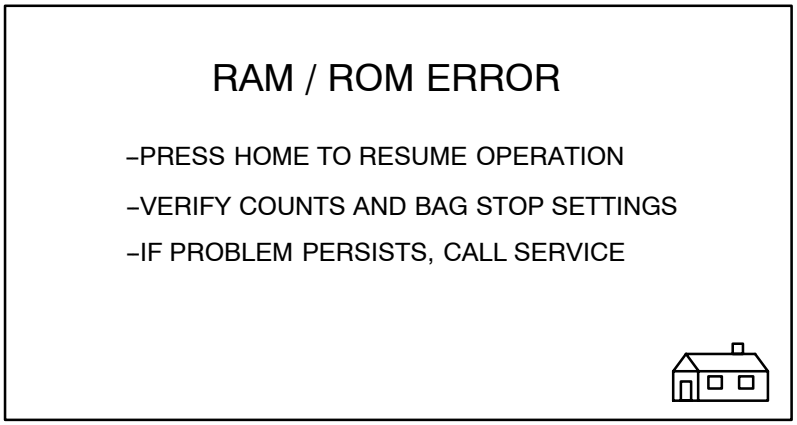



**FIGURE #38**
**RAM / ROM ERROR**

# illegal key or clear sequence

Keys were not pressed in an acceptable sequence. Press the HOME Key to restart proper key sequence.

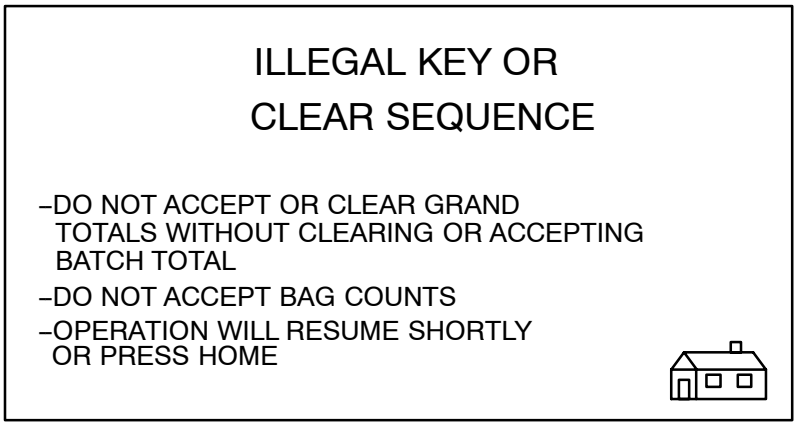

ILLEGAL KEY OR
CLEAR SEQUENCE
–DO NOT ACCEPT OR CLEAR GRAND TOTALS WITHOUT CLEARING OR ACCEPTING BATCH TOTAL
–DO NOT ACCEPT BAG COUNTS
–OPERATION WILL RESUME SHORTLY OR PRESS HOME

**FIGURE #39**
**ILLEGAL KEY OR CLEAR SEQUENCE**

# clean sensor

An object has blocked a Coin Sensor. Disconnect the Sorter from power (the battery back–up circuitry will protect the coin totals). Locate and clean the dirty Sensor, reconnect the Sorter to power and resume operation as shown in FIGURE #40.

**Note:** When the Clean Sensor Error has been corrected, the coin quantity for that station should be re–run to verify its accuracy.

**Note:** Proper cleaning procedures are discussed later in this guide.

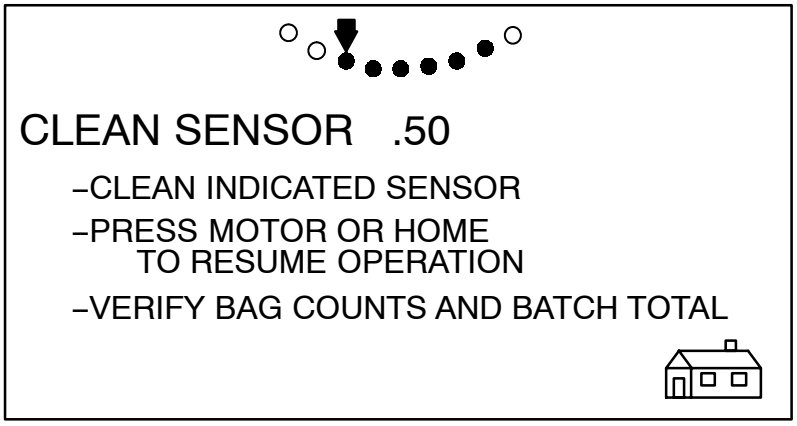



**FIGURE #40**
**CLEAN SENSOR**

# coin bag presence

The Sorter will not operate unless the Bag Spout is closed at each active bag spout location. Install bag at station indicated. The Control will return to the HOME SCREEN. Press MOTOR ON / OFF to BEGIN / RESUME sorting.

**FIGURE #41**
**COIN BAG PRESENCE**

# no accept while counting

Sorter cannot accept total while coins are being sorted / counted. Wait for sorting to stop before accepting total.

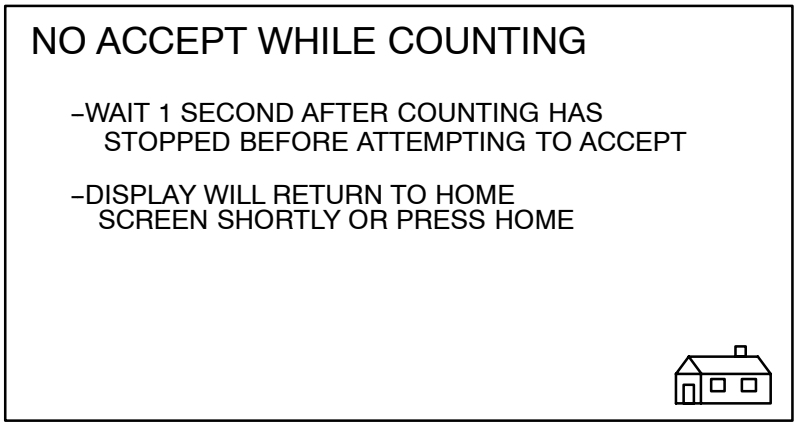

NO ACCEPT WHILE COUNTING
–WAIT 1 SECOND AFTER COUNTING HAS STOPPED BEFORE ATTEMPTING TO ACCEPT
–DISPLAY WILL RETURN TO HOME SCREEN SHORTLY OR PRESS HOME

**FIGURE #42**
**NO ACCEPT WHILE COUNTING**

# printer busy

Totals cannot be accepted while printer is operating. Wait for printing to stop before accepting total.

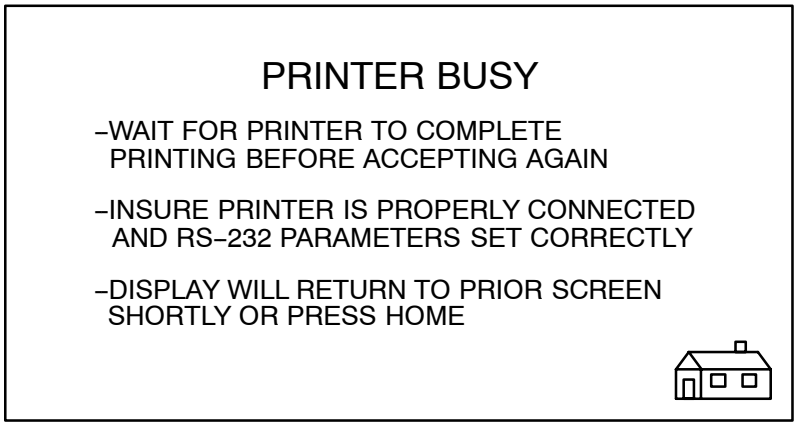

PRINTER BUSY
–WAIT FOR PRINTER TO COMPLETE PRINTING BEFORE ACCEPTING AGAIN
–INSURE PRINTER IS PROPERLY CONNECTED AND RS–232 PARAMETERS SET CORRECTLY
–DISPLAY WILL RETURN TO PRIOR SCREEN SHORTLY OR PRESS HOME

**FIGURE #43**
**PRINTER BUSY**

# communications error

An error has occurred at the port shown on the Display. Check all physical connections between Sorter and Peripherals. If all connections are proper, check the port parameters and resume operation. If the problem persists, contact your Authorized Service Representative for assistance.

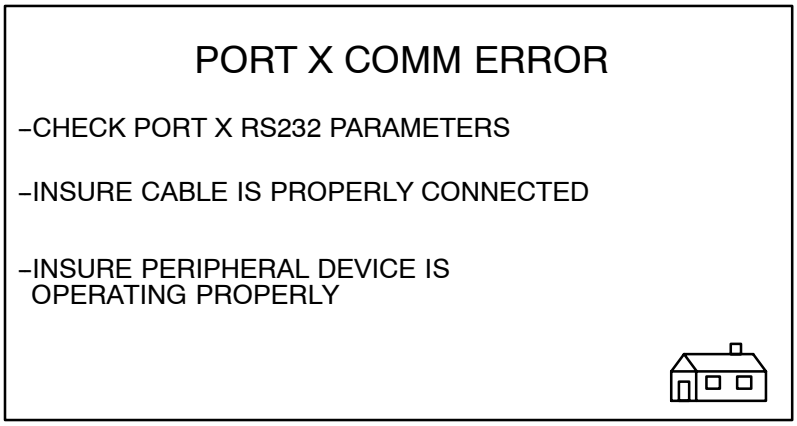

PORT X COMM ERROR
–CHECK PORT X RS232 PARAMETERS
–INSURE CABLE IS PROPERLY CONNECTED
–INSURE PERIPHERAL DEVICE IS
OPERATING PROPERLY

**FIGURE #44**
**COMMUNICATIONS ERROR**

**Note:** Port "x" in the above figure represents the port that has the error.

# default settings

The Sorter is set when manufactured to the following default parameters. Each of the parameters may be changed to fit your specific application.

To enter the Programming Mode: 1) Turn Keyswitch to the unlock position. 2) Hold the UPPER ICON SELECT Key down at power–up.

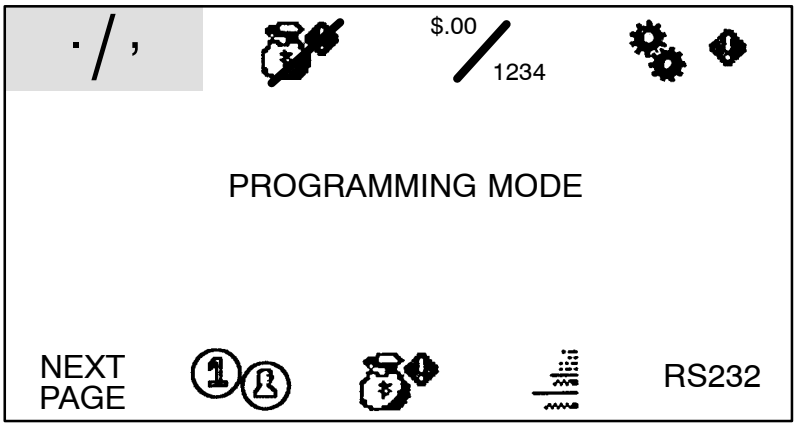



**FIGURE #45**
**HOME PROGRAMMING SCREEN**

Press the NEXT PAGE Icon Key to cycle through the programming mode, following the instructions on the Display to change the default settings. Once completed, turn the Keyswitch to the lock position.

## DEFAULT SETTINGS

1. SUPERVISOR CONTROL KEYS
   All keys are active.
2. DISPLAY DECIMAL POINT / COMMA (CHOICE AND LOCATION)
   Decimal point in position .00
3. BATCH PRINT LENGTH / NUMBER OF COPIES
   Long printout with 1 copy

# default settings

4. GRAND PRINT LENGTH / NUMBER OF COPIES
   Long printout with 1 copy

5. RS232 COMMUNICATION PORT PARAMETERS

   Port #1
   - 9600 Baud
   - No Parity
   - 7 Data Bits
   - Printer Format
   - No Handshaking
   - No ACK NAK

   Port #2
   - Same as Port #1

   Port #3
   - Same as Port #1

   Port #4
   - Same as Port #1

6. PRINT ORDER (VALUE / SIZE)
   Value

7. BAGSTOPS (Enable / Disable)
   Enable

8. RUN / AUTO–STOP
   Stop after 7 seconds

9. BAGSTOP DISPLAY (units or dollars)
   Dollars

10. BAGSTOP VALUES
    As shown in FIGURE #46

11 COIN VALUES
   As shown in FIGURE #46

   **Note:** Counting stations will be programmed to specific values / quantities at production if specified. If none are specified the values / quantities will be programmed as shown in the following chart:

12 CLEAR GRAND / GRAND AND PARTIAL TOTALS
   Grand Clear will only clear Grand Totals.

# default settings

| STATION | BAGSTOP CHOICES | | | | | |
|---|---|---|---|---|---|---|
| COIN VALUE | UNITS | VALUE | UNITS | VALUE | UNITS | VALUE |
| DISABLED | --- | --- | --- | --- | --- | --- |
| DISABLED | --- | --- | --- | --- | --- | --- |
| $.10 | 10000 | 1000.00 | 5000 | 500.00 | 1000 | 100.00 |
| $.01 | 5000 | 50.00 | 2500 | 25.00 | 500 | 5.00 |
| $.05 | 4000 | 200.00 | 2000 | 100.00 | 400 | 20.00 |
| $.25 | 4000 | 1000.00 | 2000 | 500.00 | 400 | 100.00 |
| $1.00 | 1000 | 1000.00 | 500 | 500.00 | 100 | 100.00 |
| $.50 | 2000 | 1000.00 | 1000 | 500.00 | 200 | 100.00 |
| DISABLED | --- | --- | --- | --- | --- | --- |

**FIGURE #46**
**COIN VALUE / BAGSTOP**
**DEFAULT SETTINGS**

# initializing the control for internal printer operation

The Sorter must be “told” that the Printer is installed, so that the proper communication link can be established.

**Note:** If a batch, sub or grand total is accepted and the printer has not been initialized, the printer tape may not advance far enough for proper tear–off.

**Note:** The Sorter must be in programming mode. To enter the programming mode, perform the following steps:

A. Turn Sorter Keyswitch to the unlock position.

B. Hold UPPER ICON SELECT Key down while turning Sorter ON.

C. The Display will show:

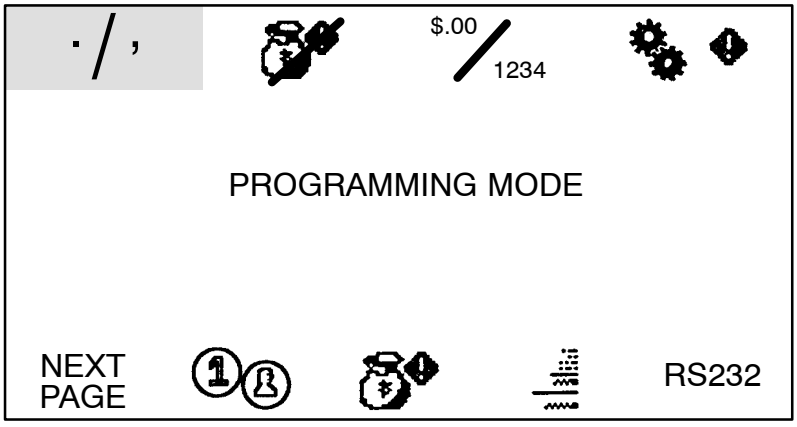



**FIGURE #47**
**HOME PROGRAMMING SCREEN**

D. Press the NEXT PAGE Icon Key.

# initializing the control for internal printer operation

E. The Display will show:

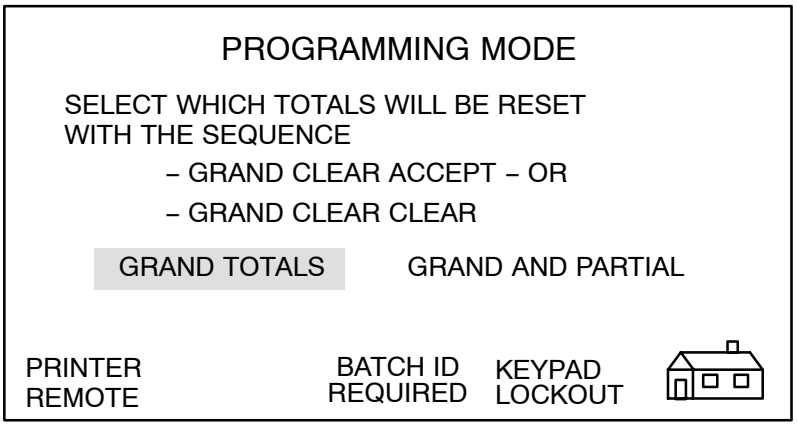



**FIGURE #48**
**SECOND PROGRAMMING SCREEN**

F. Press the PRINTER REMOTE Icon Key.

G. The Display will show:

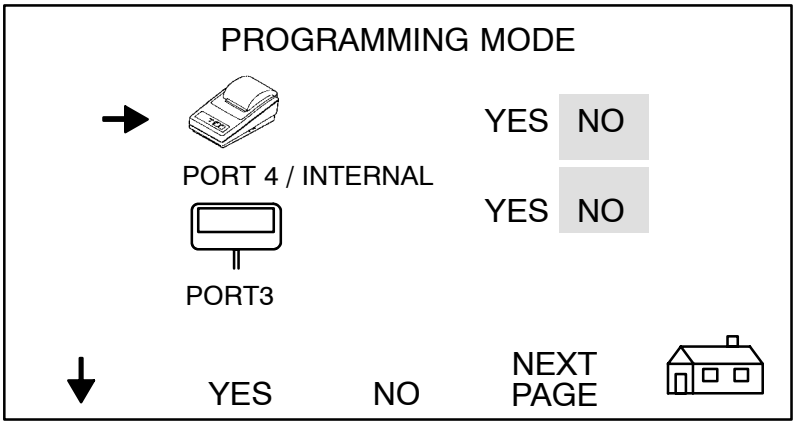



**FIGURE #49**
**INITIALIZATION SCREEN**

# initializing the control for internal printer operation

H. Cycle the DOWN ARROW Icon Key ( ↓ ) until the PORT 4 / INTERNAL Icon is selected.

I. Press the NO Icon Key.

J. Press the HOME Key.

K. The Display will show:

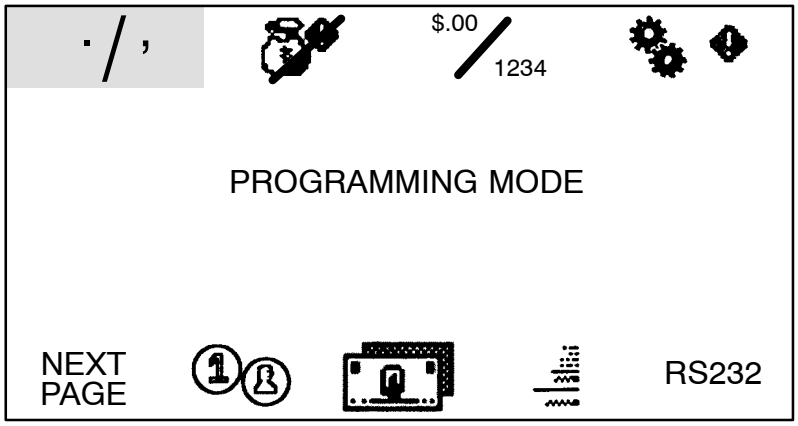



**FIGURE #50**
**HOME PROGRAMMING SCREEN**

L. Press the RS–232 Icon Key.

# initializing the control for internal printer operation

M. The Display will show:

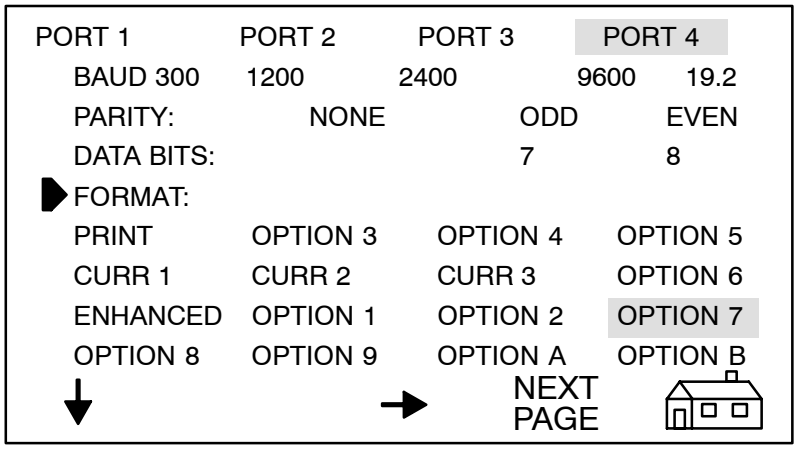

PORT 1 PORT 2 PORT 3 PORT 4
BAUD 300 1200 2400 9600 19.2
PARITY: NONE ODD EVEN
DATA BITS: 7 8
FORMAT:
PRINT OPTION 3 OPTION 4 OPTION 5
CURR 1 CURR 2 CURR 3 OPTION 6
ENHANCED OPTION 1 OPTION 2 OPTION 7
OPTION 8 OPTION 9 OPTION A OPTION B
NEXT PAGE

**FIGURE #51**
**RS232 PARAMETERS**

N. Cycle the UPPER ICON CHOICE Key to highlight PORT 4.

O. Cycle the DOWN ARROW Key to FORMAT.

P. Cycle the RIGHT ARROW Key to highlight OPTION 7.

Q. Turn the Sorter Keyswitch to the lock position.

# initializing the control for external printer operation

The Sorter must be "told" that a Printer is connected, so that the proper communication link can be established.

**Note:** The Sorter must be in programming mode. To enter the programming mode, perform the steps below.

A. Connect the Printer to Port #4 at the rear of the Sorter.

B. Turn Sorter Keyswitch to the unlock position.

C. Hold UPPER ICON SELECT Key down while turning Sorter ON.

D. The Display will show:

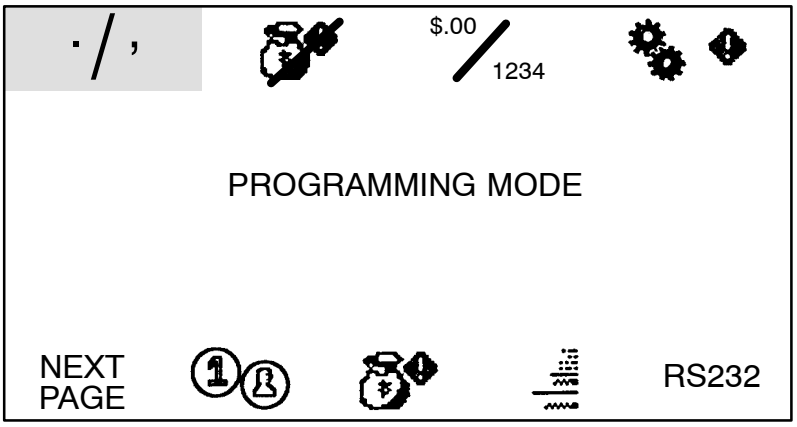



**FIGURE #52**
**HOME PROGRAMMING SCREEN**

E. Press the NEXT PAGE Icon Key.

# initializing the control for external printer operation

F. The Display will show:

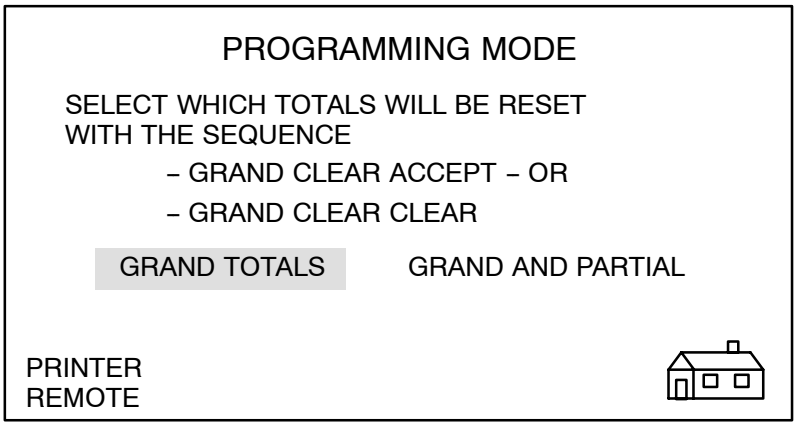



**FIGURE #53**
**SECOND PROGRAMMING SCREEN**

G. Press the PRINTER REMOTE Icon Key.

H. The Display will show:

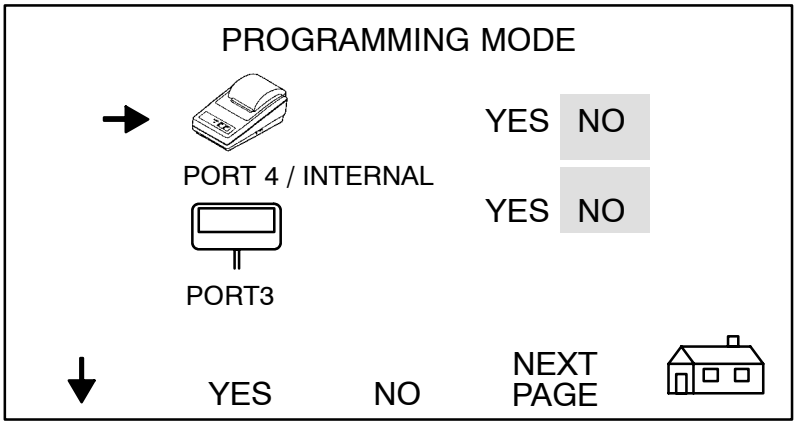



**FIGURE #54**
**INITIALIZATION SCREEN**

# initializing the control for external printer operation

I. Cycle the DOWN ARROW Icon Key ( ↓ ) until the PRINTER Icon is selected.

J. Press the YES Icon Key.

K. Turn the Sorter Keyswitch to the lock position.

**Note:** If a batch or grand total is accepted and the printer has not been initialized, the printer tape may not advance far enough for proper tear–off. Initialize the printer (steps A–K above).

PORT SETTINGS FOR OTHER EXTERNAL PRINTERS:

CITIZEN IDP 3550 / 3540

| | | |
|---|---|---|
| BAUD | = | 9600 |
| DATA BITS | = | 8 |
| PARITY | = | NONE |
| RTS / CTS | = | ENABLED |
| FORMAT | = | OPTION 3 |
| ACK / NAK | = | DISABLED |
| PORT 4 PRINTER | = | NO |

(SEE FIGURE #54)

# initializing the control for remote display operation

The Sorter must be “told” that a Remote Display is connected, so that the proper communication link can be established.

**Note:** The sorter must be in programming mode. To enter the programming mode, perform the steps below.

A. Connect Remote Display to Port #3 at rear of Sorter.

B. Turn Sorter Keyswitch to the unlock position.

C. Hold UPPER ICON SELECT Key down while turning Sorter ON.

D. The Display will show:

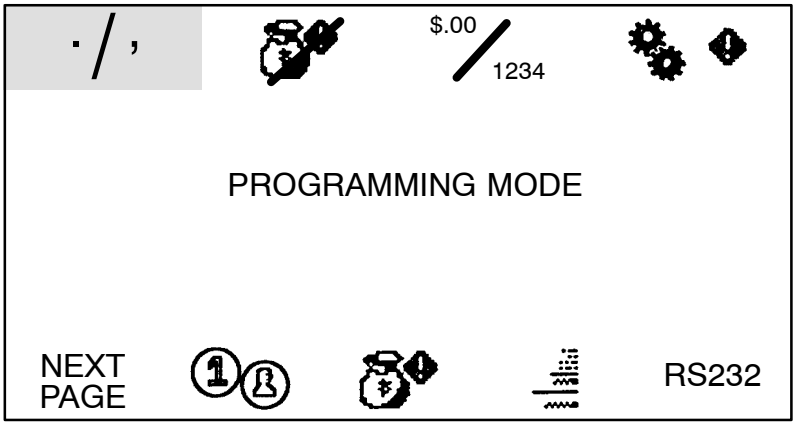



**FIGURE #55**
**HOME PROGRAMMING SCREEN**

E. Press the NEXT PAGE Icon Key.

# initializing the control for remote display operation

F. The Display will show:

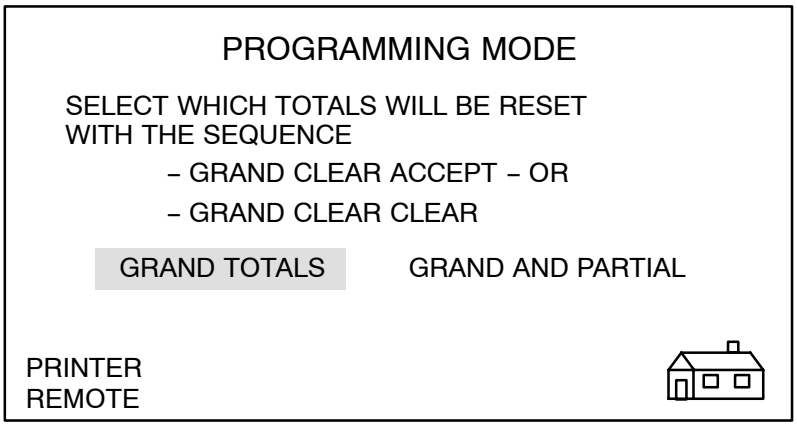



**FIGURE #56**
**SECOND PROGRAMMING SCREEN**

G. Press the PRINTER REMOTE Icon Key.

# initializing the control for remote display operation

H. The Display will show:

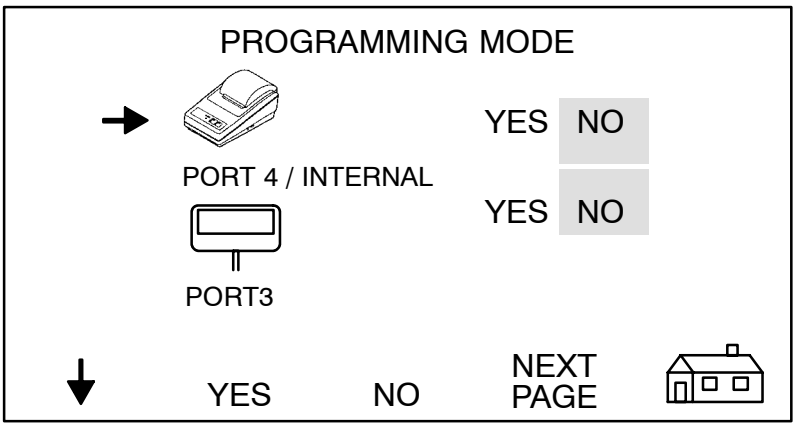



**FIGURE #57**
**INITIALIZATION SCREEN**

I. Cycle the DOWN ARROW Icon Key ( ↓ ) until the REMOTE DISPLAY Icon is selected.

J. Press the YES Icon Key.

K. Turn the Sorter Keyswitch to the lock position.

# programming key functions

The following pages explain in detail all the steps necessary to properly program the Sorter.

**Note:** Pressing the next page and prior page icon keys allows the operator to cycle between the 3 basic programming screens.

**1. KEY LOCKOUT FUNCTION**

The Keylock has two positions:

A. Unlock. Placing the Keylock in this position (padlock shown open) allows use of all Front Panel Switches and also allows access to the programming and service log features.

B. Lock. Placing the Keylock in this position (padlock shown closed) prevents the use of the batch, grand, bag count, clock and C/CE keys. In addition, access to the programming and service log features is also prevented.

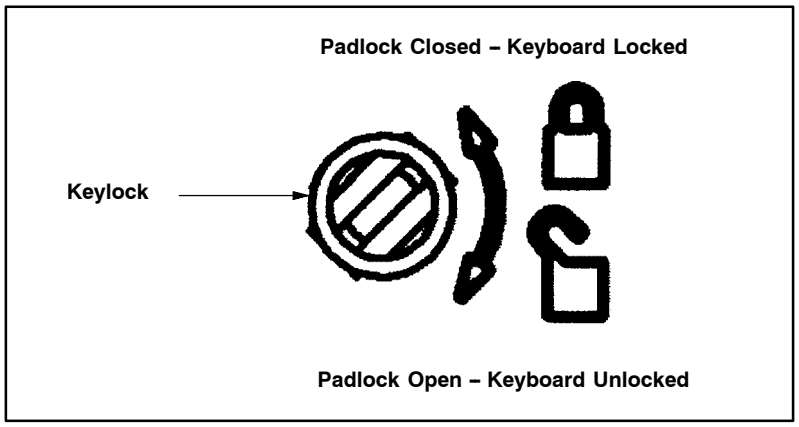



**FIGURE #58**
**KEYLOCK POSITIONS**

# programming key functions

**2. DECIMAL POINT / COMMA SELECTION, BAGSTOP ENABLE / DISABLE SELECTION, BAGSTOP UNITS OR VALUE SELECTION AND 7 SECOND MOTOR STOP / NO STOP SELECTION.**

A. Turn Keyswitch to unlock position.

B. Hold the UPPER ICON SELECT Key on Control down and switch the Sorter Power ON.

C. The Display will show:

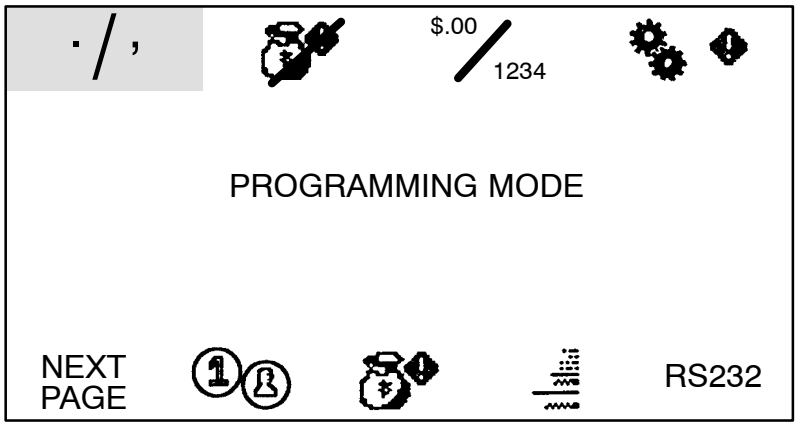



**FIGURE #59**
**HOME PROGRAMMING SCREEN**

D. Cycle the UPPER ICON CHOICE Key to highlight the desired parameter you wish to change.

E. Press the UPPER ICON SELECT Key.

# programming key functions

F. The Display will show:

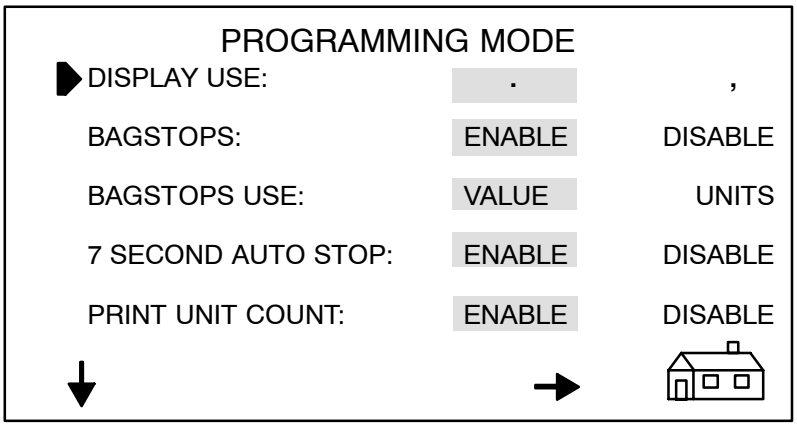



**FIGURE #60**
**PROGRAMMING OPTION**

G. Cycle the DOWN ARROW Icon Key ( ↓ ) to select the Programming choice you wish to make.

H. Cycle the RIGHT ARROW Icon Key ( → ) to highlight one of the two choices available for the option you have selected.

I. For additional programming choices on this screen, cycle the DOWN ARROW Icon Key ( ↓ ) to select the next programming option and repeat steps G and H.

J. Press the HOME Icon Key ( ⌂ ) to exit.

# programming key functions

**3. BATCH, OR GRAND PRINT LENGTH / NUMBER OF COPIES AND ORDER OF PRINTOUT**

A. Turn Keyswitch to the unlock position.

B. Hold UPPER ICON SELECT Key on Control down, and switch the Sorter Power Switch to ON.

C. The Display will show:

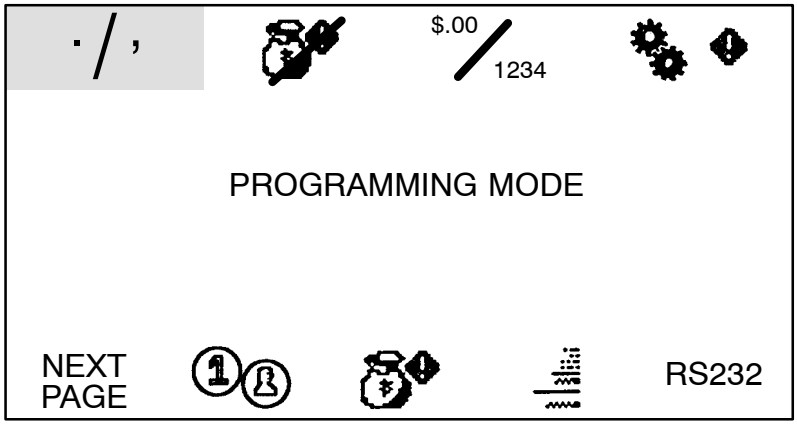



**FIGURE #61**
**HOME PROGRAMMING SCREEN**

D. Press the PRINTOUT Icon Key ( ).

# programming key functions

E. The Display will show:

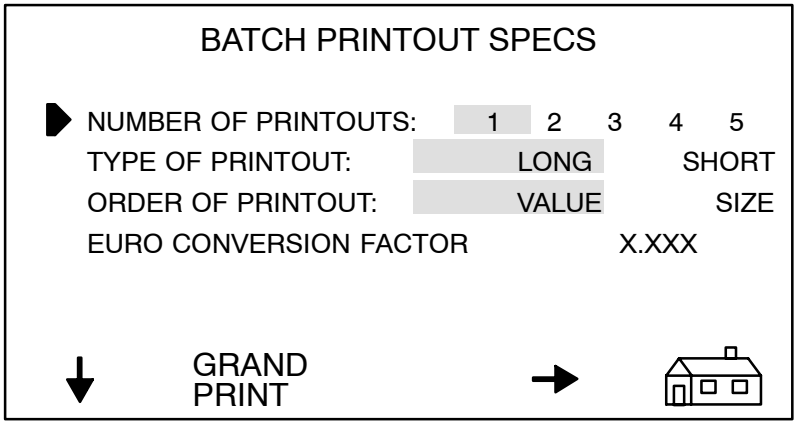

BATCH PRINTOUT SPECS
NUMBER OF PRINTOUTS: 1 2 3 4 5
TYPE OF PRINTOUT: LONG SHORT
ORDER OF PRINTOUT: VALUE SIZE
EURO CONVERSION FACTOR X.XXX
GRAND PRINT

**FIGURE #62**
**PRINT OPTIONS**

F. Press the BATCH PRINT or GRAND PRINT Icon Key to select Print options for these totals. The print total option selected will be stated at the top of the Display.

G. Cycle the DOWN ARROW Icon Key ( ↓ ) to select the printout option you wish to change.

H. Cycle the RIGHT ARROW Icon Key ( → ) to highlight which choice you wish for each option.

I. For additional printout options repeat steps F – H.

J. Press the HOME Icon Key ( ) to exit.

K. Examples of long and short Batch printouts are shown in FIGURE #63.

**Note:** The screen shown in FIGURE #62 selects batch or grand print options. Which ever is selected on the top of the Display, the other will be shown at the bottom of the Display.

# programming key functions

| B A T C H | A C C E P T |
|---|---|
| TIME 09:15 | 09/21/2002 |
| BATCH | 100 |
| SUB | 00 |
| GRAND | 00 |
| .01 | .07 |
| .05 | .05 |
| .10 | 4.80 |
| .25 | .25 |
| 1.00 | 1.00 |
| TOTAL COIN | 6.17 |
| | --------- |
| TOTAL | 6.17 |

**LONG**

| B A T C H | A C C E P T |
|---|---|
| TIME 09:15 | 09/21/2002 |
| BATCH | 100 |
| SUB | 00 |
| GRAND | 00 |
| TOTAL COIN | 6.17 |
| TOTAL | 6.17 |

**SHORT**

**FIGURE #63**
**BATCH PRINTOUT EXAMPLES**

```
GRAND     ACCEPT
TIME 15:09      09/21/2002
GRAND                   00
PARTIAL BAG TOTALS
      .50             33.00
     1.00             35.00
      .25             33.50
      .05              7.00
      .10             36.30
                   ---------
TOTAL                149.08

GRAND TOTALS
      .01              9.40
      .05              8.00
      .10            562.70
      .25            398.25
      .50              8.50
     1.00             36.00
TOTAL COIN          1022.85
                   ---------
TOTAL               1022.85
PC CNT                 8373
SORT CNT                005
```

**LONG**

```
GRAND     ACCEPT
TIME 15:09      09/21/2002
GRAND                   00
PARTIAL BAG TOTALS
TOTAL                149.08
TOTAL COIN          1022.85
                   ---------
TOTAL               1022.85
```

**SHORT**

**FIGURE #64**
**GRAND PRINTOUT EXAMPLES**

# programming key functions

**4. THE FEE FUNCTION**

**Introduction:** This function provides the Operator with the capability of accessing a fee for processing a transaction.

**For this example / explanation, a fee of 5% will be assessed.**

A. Turn Keyswitch to the unlock position.

B. Hold UPPER ICON SELECT Key on Control down, and switch the Sorter Power Switch to ON.

C. The Display will show:

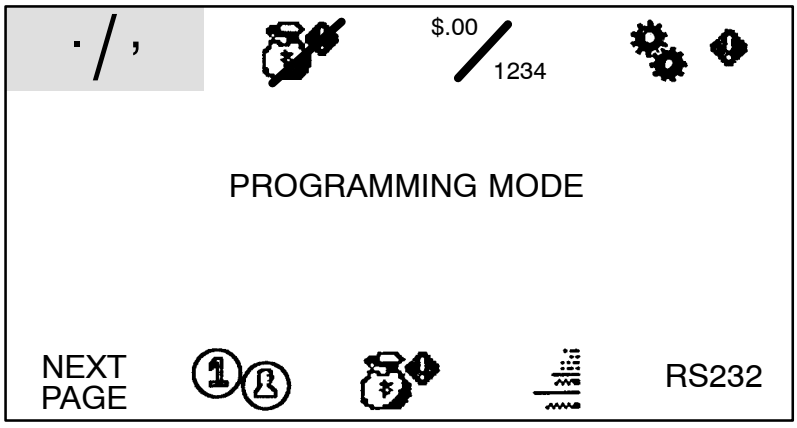



**FIGURE #65**
**HOME PROGRAMMING SCREEN**

D. Press the PRINTOUT Icon Key ( ).

# programming key functions

E. The Display will show:

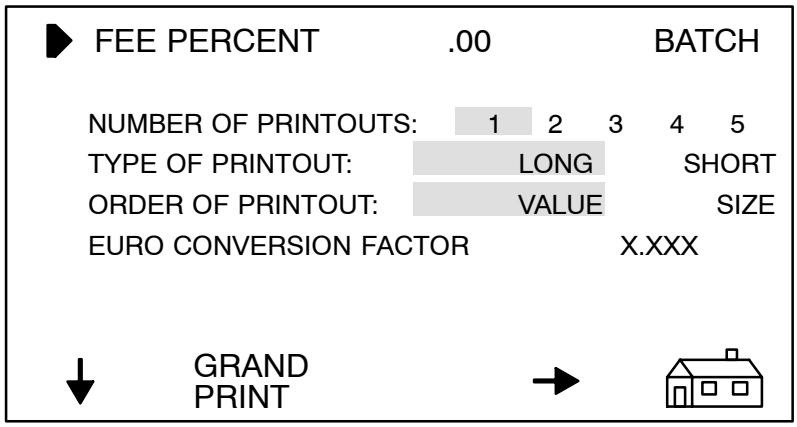



**FIGURE #66**
**PRINT OPTIONS**

F. Cycle the RIGHT ARROW Icon Key ( ➔) to reach the percentage required. Each depression of the Key will advance the percentage by 1/10 of 1% (.10), up to 15%.

**For this example / explanation, a fee of 5% will be assessed.**

**Note:** When the 15% amount is reached, the next depression will recycle the amount back to zero.

**Note:** If an error is made, press the key directly to the left of the RIGHT ARROW Icon Key to clear, and start again.

G. When the proper (desired) percentage is displayed, turn the key switch to the lock position to enter the amount into memory.

# programming key functions

H. The Display will show:

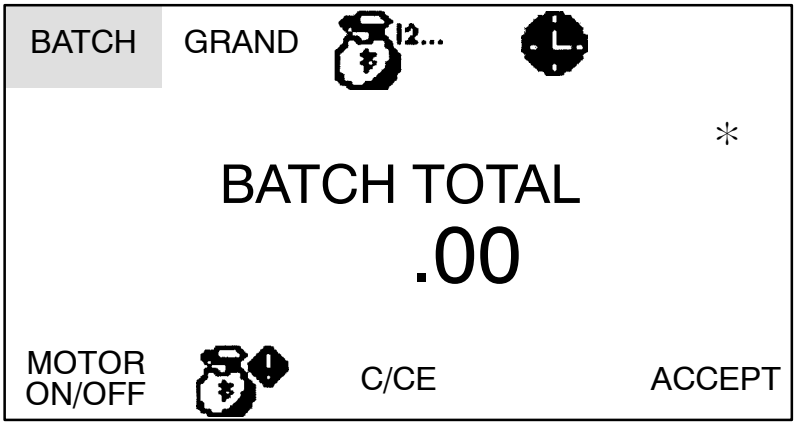



**FIGURE #67**
**HOME SCREEN**

I. Process the first batch of coin.

J. When the counting is complete, press the ACCEPT Key.

K. The Display will show:

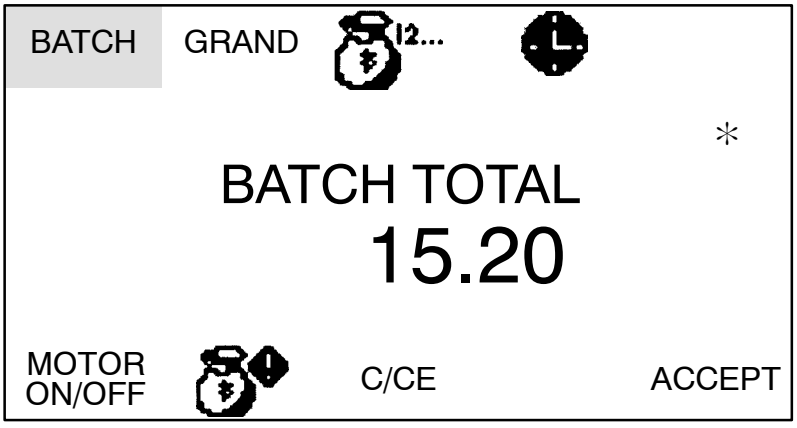



**FIGURE #68**
**HOME SCREEN**

# programming key functions

L. If a printer is utilized, the Audit Tape will show:

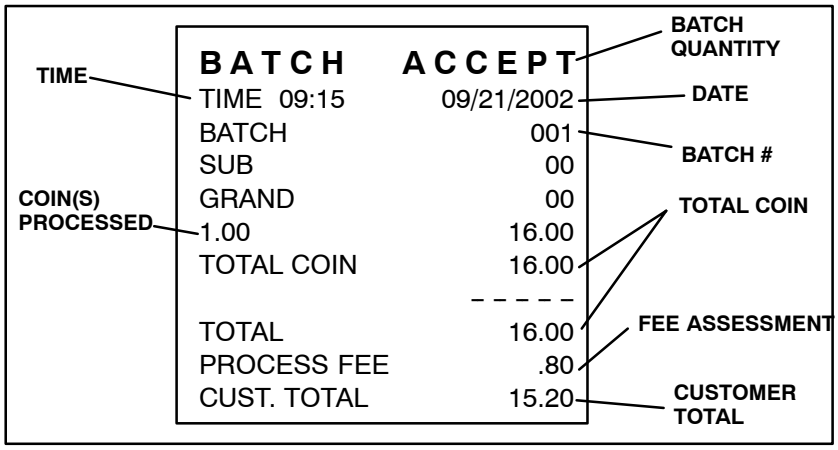



**FIGURE #69**
**AUDIT TAPE (BATCH)**

**Note:** The batch total displayed in FIGURE #68 and printed in FIGURE #69, reflects the total amount processed less the processing fee, i.e., the amount paid to the customer.

M. Repeat steps I – L for additional batches.

N. When all batches are processed, cycle the UPPER ICON SELECT Key until the word GRAND is highlighted.

# programming key functions

O. The Display will show:

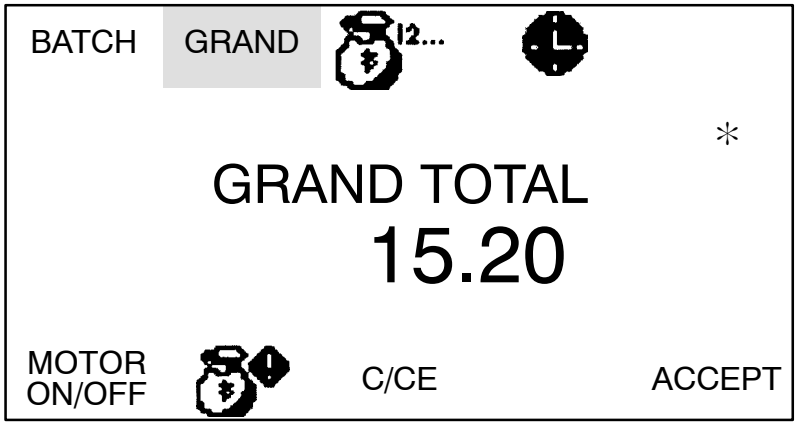



**FIGURE #70**
**HOME SCREEN**

P. Press the UPPER ICON SELECT Key.

Q. The Display will show:

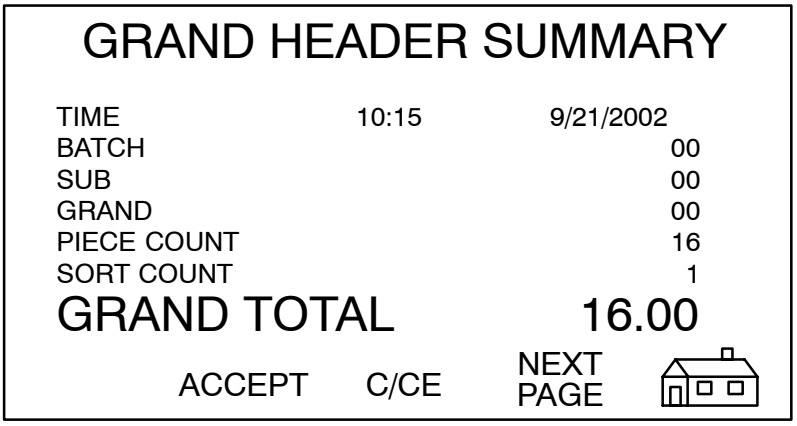



**FIGURE #71**
**GRAND HEADER SUMMARY SCREEN**

R. The Audit Trail Tape will show:

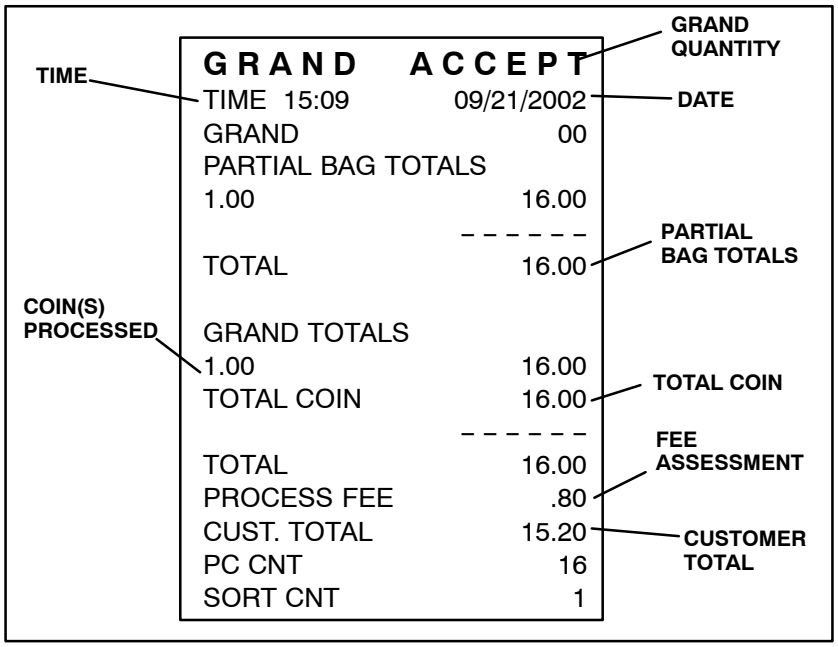



**FIGURE #72**
**AUDIT TAPE (GRAND)**

S. Press the ACCEPT Icon Key.

# programming key functions

**Note:** To enable the Conversion Factor Feature, "PRINT UNIT COUNT" (FIGURE #60) must be enabled.

**Note:** If Euro Conversion Factor is "1", the total euro lines on the printer tape are **not** printed (see FIGURE #76 and FIGURE #77).

**5. CONVERSION FACTOR**

A. Turn Keyswitch to the unlock position.

**Introduction:** Internationally, this feature allows the coinage from those countries participating in the Euro coin conversion program a method of calculating the value of existing coins compared to the new Euro coins.

Domestically, this feature allows the coin processing entity (bank, savings/loan, etc.) to charge a percentage of the total amount processed as a processing / handling fee.

B. Hold UPPER ICON SELECT Key on Control down, and switch the Sorter Power Switch to ON.

C. The Display will show:

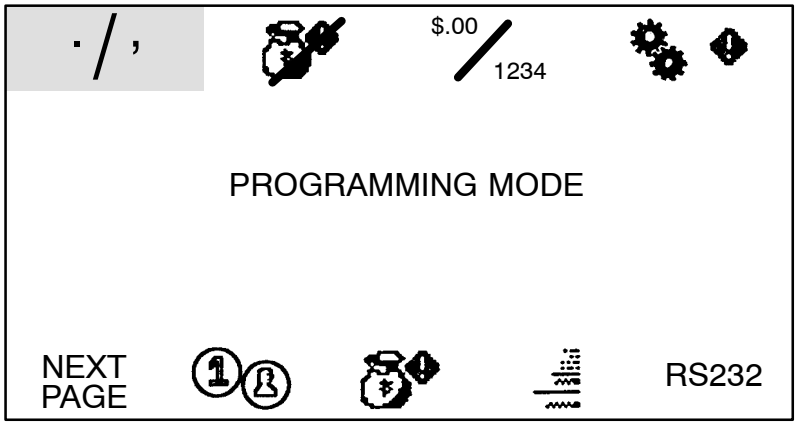



**FIGURE #73**
**HOME PROGRAMMING SCREEN**

D. Press the PRINTOUT Icon Key ( ).

# programming key functions

E. The Display will show:

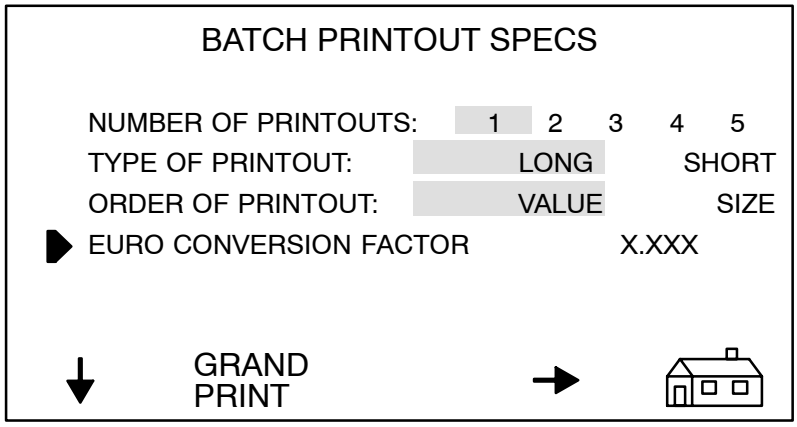

BATCH PRINTOUT SPECS
NUMBER OF PRINTOUTS: 1 2 3 4 5
TYPE OF PRINTOUT: LONG SHORT
ORDER OF PRINTOUT: VALUE SIZE
EURO CONVERSION FACTOR X.XXX
GRAND PRINT

**FIGURE #74**
**PRINT OPTIONS**

F. Cycle the DOWN ARROW Icon Key ( ↓ ) to select the conversion factor.

G. Cycle the RIGHT ARROW Icon Key ( → ) to highlight the digit you wish to change.

H. Press the HOME Icon Key ( ) to exit.

I. Examples of long and short Batch printouts are shown in FIGURE #76.

**Note:** To determine the correct conversion factor, divide the number one (1) by the percentage of return after processing as shown in FIGURE #75.

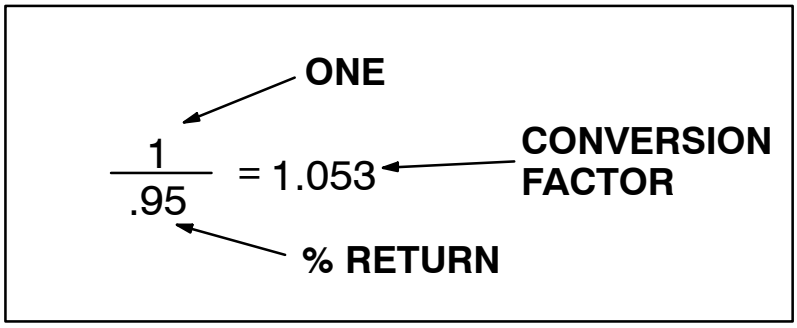



**FIGURE #75**
**CONVERSION FACTOR**

# programming key functions

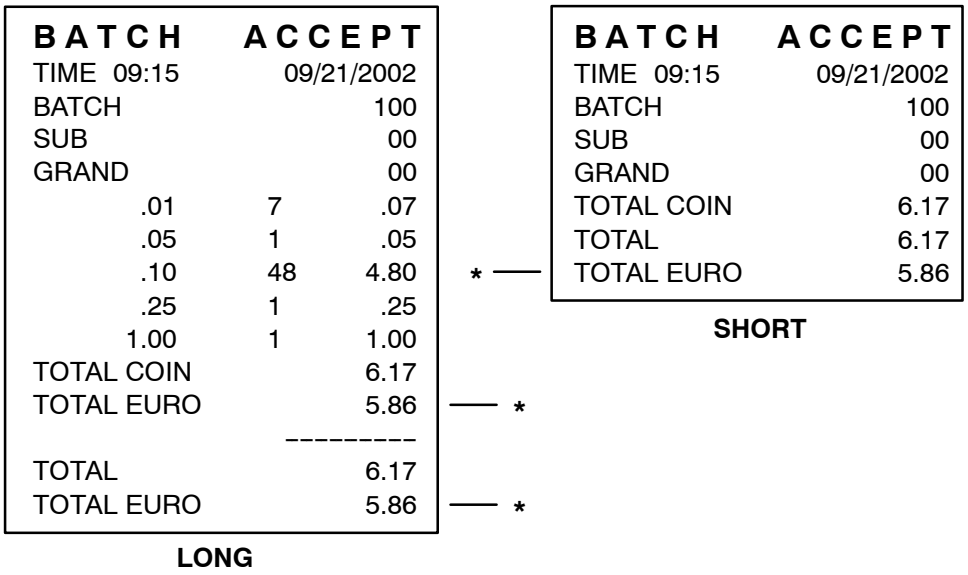



**FIGURE #76**
**BATCH PRINTOUT EXAMPLES**

*** EURO TOTALS DO NOT PRINT IF CONVERSION FACTOR = 1. REFER TO THE FIRST PAGE OF THIS SECTION FOR ADDITIONAL INFORMATION.**

# programming key functions

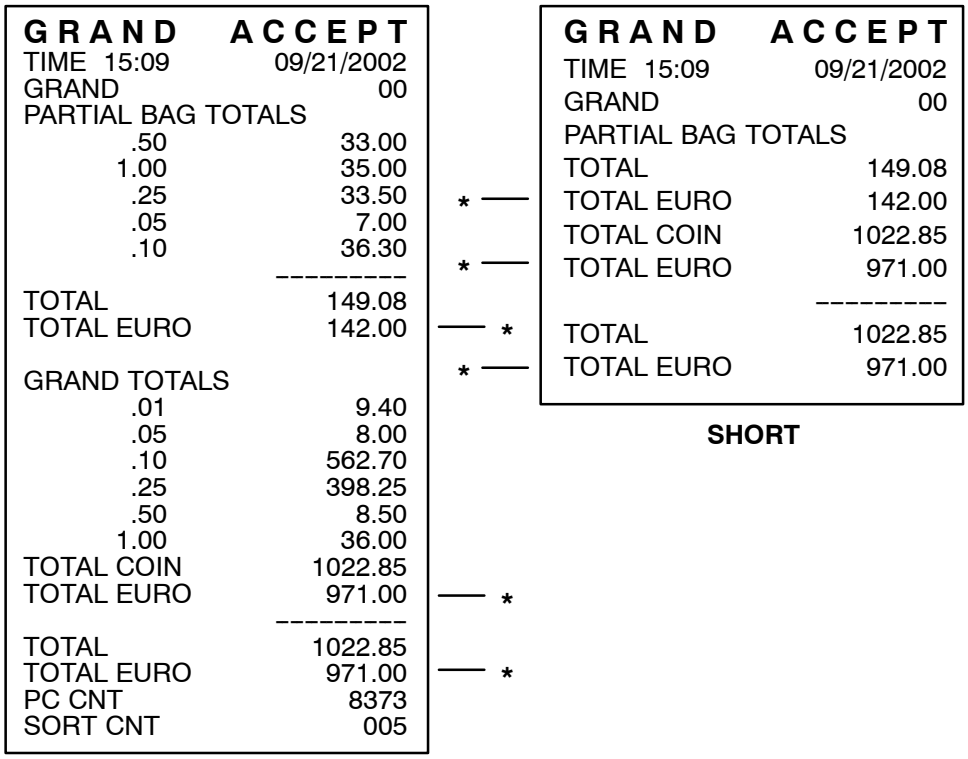



**FIGURE #77**
**GRAND PRINTOUT EXAMPLES**

*** EURO TOTALS DO NOT PRINT IF CONVERSION FACTOR = 1. REFER TO THE FIRST PAGE OF THIS SECTION FOR ADDITIONAL INFORMATION.**

# programming key functions

### 6. RS232 COMMUNICATION PORT PARAMETERS

INTERFACE CHART

| Model | Interface Cable | DCE / DTE | Baud Rate | Data Bits | PARITY | DTR / DSR | RTS / CTS | Port ( s ) | Display Selection | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 8700 | D300847 | DTE | 1200 | 7 | NONE | - - - | - - - | 1-2-3-4 | PRINTER | CONNECT TO RS232 |
| 4709 | D300847 | DTE | 1200 | 7 | NONE | - - - | - - - | 1-2-3-4 | PRINTER | COIN = COMM PORT 6 |
| 4810 | D300847 | DTE | 1200 | 7 | NONE | - - - | - - - | 1-2-3-4 | PRINTER | COIN = COMM PORT 6 |
| M5 / M7 Outpur Format | - - - | DTE | - - - | - - - | - - - | - - - | - - - | 1-2-3-4 | OPTION 4 | OLD PRINTER OUTPUT FORMAT |
| 0036886 | - - - | DTE | 19.2K | 8 | NONE | - - - | - - - | 3 | - - - | - - - |
| 0036888 | 0033131 | DTE | 9600 | 8 | NONE | - - - | RTS | 1-2-3-4 | - - - | PORT 4 |
| M3540/3550 CTZN PNTR | 0035561 | DTE | 9600 | 8 | NONE | - - - | RTS | 1-2-3-4 | OPTION 3 | PORT 4 |
| THML PNTR | - - - | - - - | - - - | - - - | - - - | - - - | - - - | 4 | OPTION 7 | Kit # 0035544 |
| DEPROS | - - - | - - - | - - - | - - - | - - - | - - - | - - - | - - - | ENHANCED | WHEN ENHANCED SELECTED ALL PARAMETERS ARE SET |

A. Turn the Keyswitch to the unlock position.

B. Hold the UPPER ICON SELECT Key down while turning the Sorter on.

C. The Display will show:

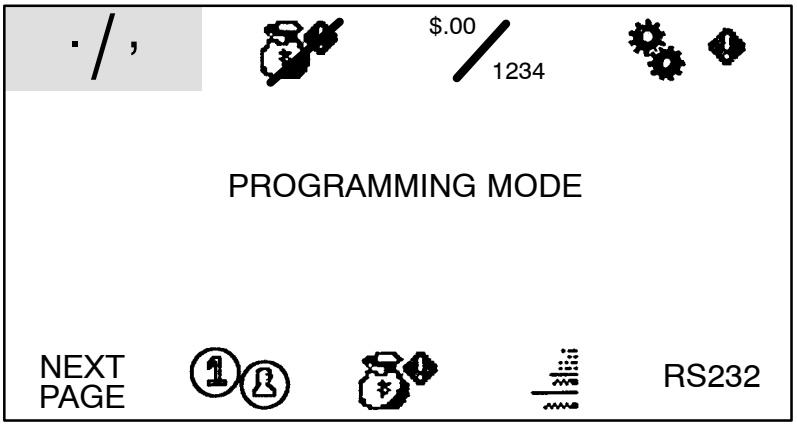



**FIGURE #78**
**HOME PROGRAMMING SCREEN**

# programming key functions

D. Press the RS232 Icon Key.

E. The Display will show:

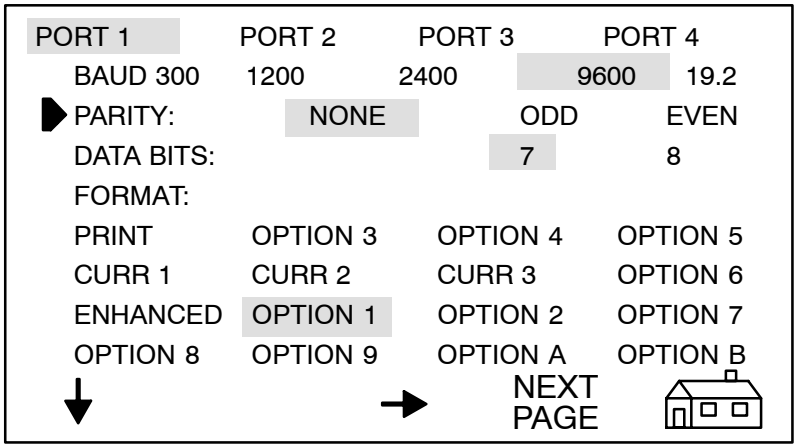



**FIGURE #79**
**RS232 PARAMETERS**

F. Cycle the UPPER ICON CHOICE Key to highlight the RS232 port you wish to change.

G. Cycle the DOWN ARROW Icon Key ( ↓ ) to select the RS232 parameter you wish to change.

H. Cycle the RIGHT ARROW Icon Key ( → ) to highlight which choice you want for that parameter.

# programming key functions

I. Press the NEXT PAGE Icon Key for additional choices as shown below:

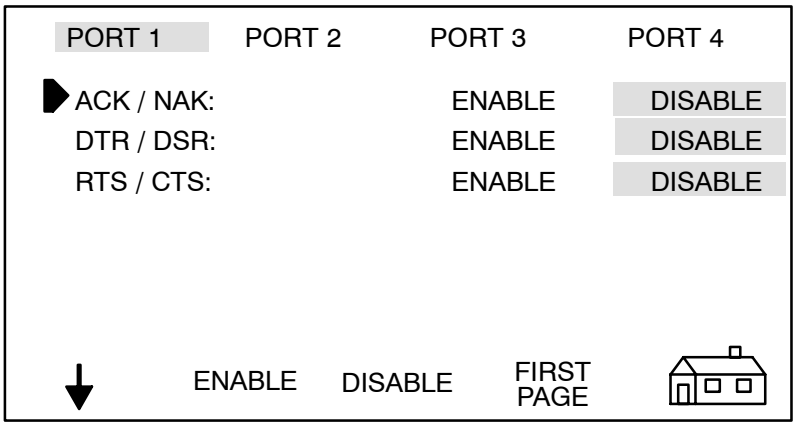



**FIGURE #80**
**RS232 PARAMETERS**

J. Insure the Port at the top of the Display is highlighted with the Port number you wish to change. Cycle the UPPER ICON CHOICE key if a change is required.

K. Cycle the DOWN ARROW Icon Key ( ↓ ) to select the RS232 parameter you wish to change.

L. Press the ENABLE or DISABLE Icon Key to highlight the choice you want for that parameter.

M. Press the FIRST PAGE Icon key or select another Port number to change if other Ports' parameters must be changed.

N. The following pages show examples of the various formats that are available.

**Note:** Be sure that Display shows correct port #.

# programming key functions

1. Print Format

   A typical print format is shown in FIGURE #81. It contains a header, fixed and variable fields.

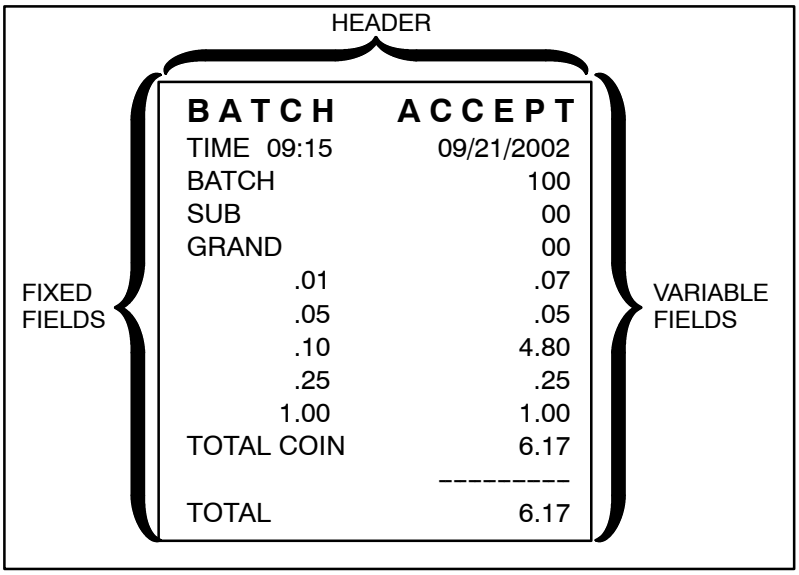



**FIGURE #81**
**PRINT FORMAT**

# programming key functions

2. Currency Counter Format

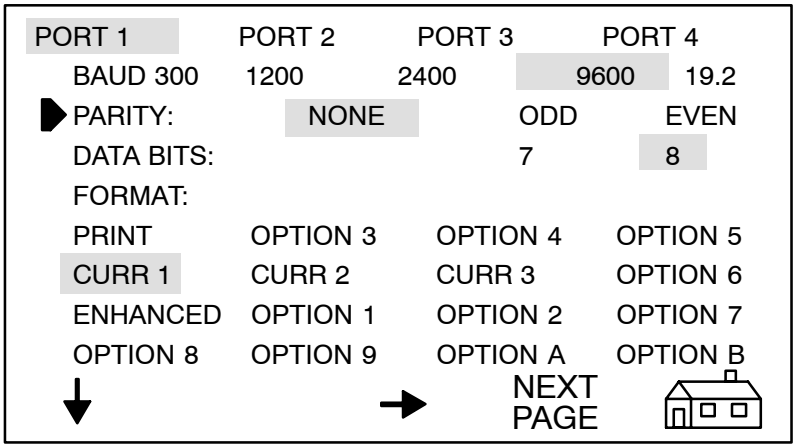



**FIGURE #82**
**RS232 PARAMETERS**

Sets the Port output format for compatibility with Currency Counters.

3. Enhanced mode format

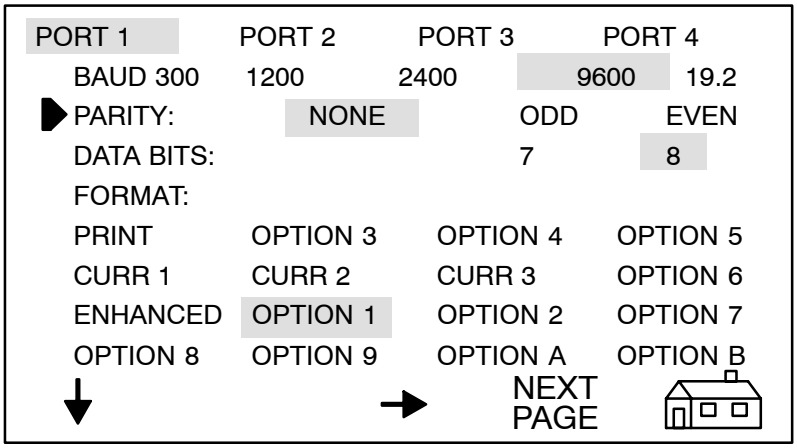



**FIGURE #83**
**RS232 PARAMETERS**

Allows external (remote) commands to control all Sorter functions.

# programming key functions

**7. PROGRAM COIN VALUES**

A. Turn Keyswitch to unlock position.

B. Hold the UPPER ICON SELECT Key on Control down, and switch the Sorter Power Switch to ON.

C. The Display will show:

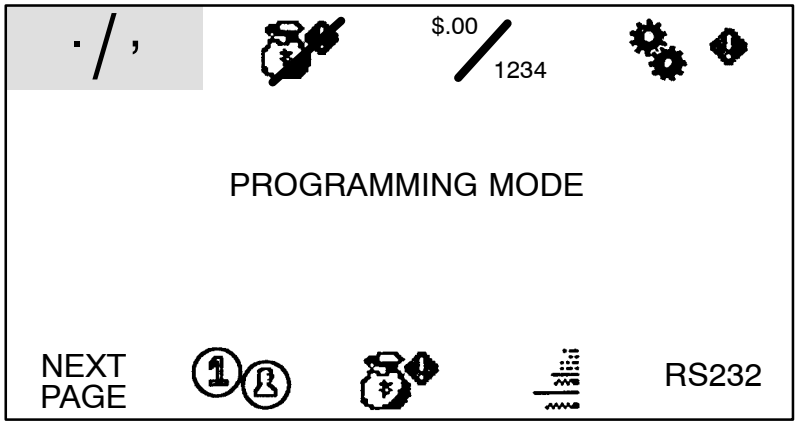



**FIGURE #84**
**HOME PROGRAMMING SCREEN**

D. Press the COIN Icon Key ( ).

# programming key functions

E. The Display will show:

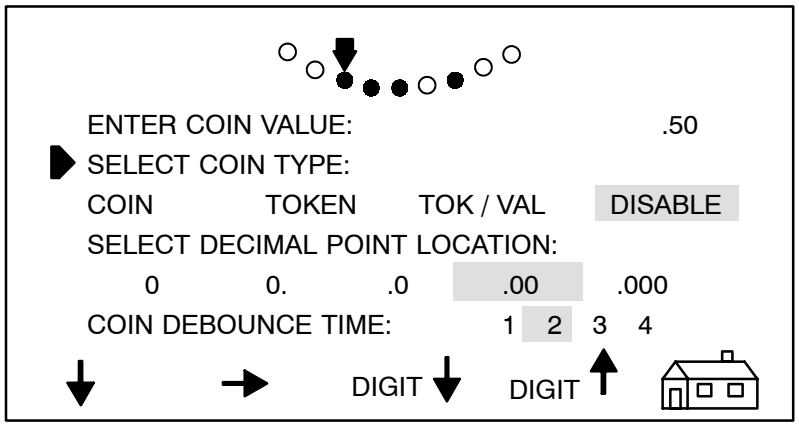



**FIGURE #85**
**COIN PROGRAMMING SCREEN**

**⚠CAUTION**

SELECTION OF THE COIN DEBOUNCE SETTING SHOULD ONLY BE PERFORMED BY YOUR AUTHORIZED SERVICE TECHNICIAN.

IT IS NOT AN OPERATOR–SETABLE OR CHANGEABLE FEATURE.

F. Cycle the UPPER ICON CHOICE Key to select the coin station to be programmed.

G. Cycle the DOWN ARROW Icon Key ( ↓ ) to select the coin parameter to be changed.

H. Cycle the RIGHT ARROW Icon Key ( → ) to highlight the option you wish to select for the chosen coin station.

I. To change the coin value or coin label for printouts, cycle the UP DIGIT Icon Key (Digit ↑ ) or DOWN DIGIT Icon Key (Digit ↓ ) to change the highlighted digit.

J. To select what type of coin is to be sorted, choose the second selection as follows:

COIN – Has denominational value and adds to Batch and Grand Totals.

TOKEN – Coin label will be of the #XXXXX type, there will only be a unit value and it will not add to the Batch or Grand totals.

# programming key functions

TOKEN / VAL – To be used for coin with the same denominational value as another coin, will add by value to the Batch and Grand totals.

DISABLE – Choose this option when no coins are expected to be sorted at this particular station. Will not count or display blocked sensor error messages.

K. To select the decimal point position, use the RIGHT ARROW Icon Key (➔) to highlight which format you wish to use for the coin denominational value and coin label.

**Caution:** Selection of the decimal point location is a global change!
It affects every coin on every screen!

# programming bagstop values

**8. PROGRAM BAGSTOP VALUES**

A. Turn Keyswitch to unlock position.

B. Hold the UPPER ICON SELECT Key on Control down, and switch the Sorter Power Switch to ON.

C. The Display will show:

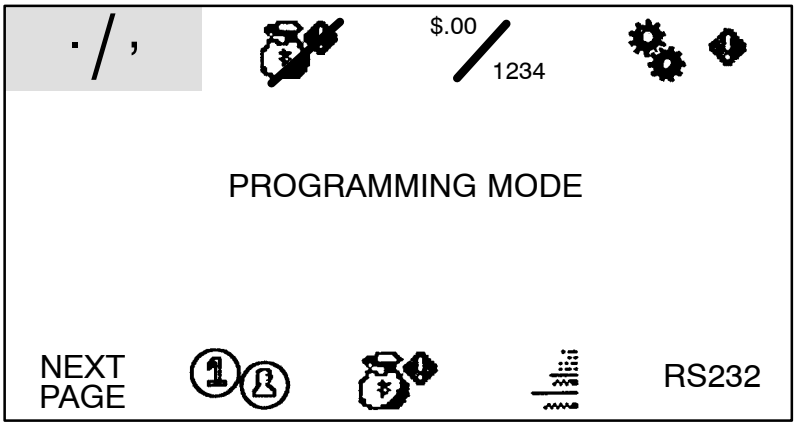



**FIGURE #86**
**HOME PROGRAMMING SCREEN**

D. Press the BAGSTOP Icon Key ( ).

# programming bagstop values

E. The Display will show:

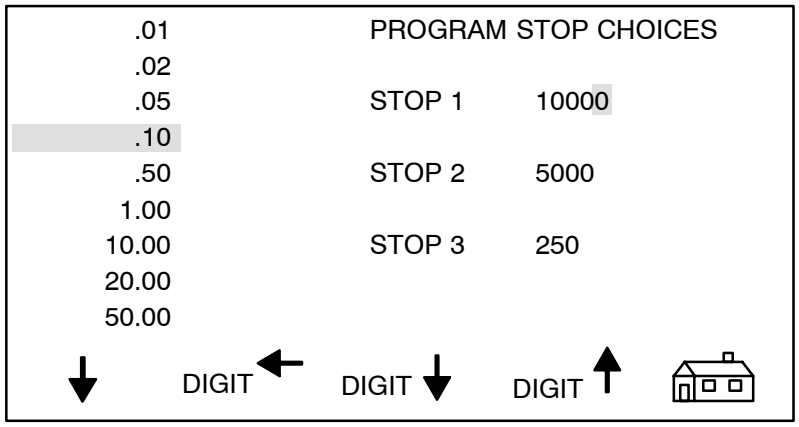



**FIGURE #87**
**BAGSTOP PROGRAMMING SCREEN**

F. Cycle the left DOWN ARROW Icon Key ( ↓ ) to highlight the coin you wish to change the bagstop for.

G. Cycle the LEFT DIGIT Icon Key (Digit ←) to select the digit to be changed for one of the three choices.

H. Cycle the UP DIGIT Icon Key (Digit ↑ ) or DOWN DIGIT Icon Key (Digit ↓ ) to increase or decrease the selected digit from 0 to 9.

I. Repeat steps G and H for additional bagstop choices.

J. Repeat steps F – I for additional bagstop programming for additional coin stations.

# fuse location

The Sorter employs one Fuse in each leg of the incoming AC line. If either Fuse becomes inoperative, the Sorter will stop.

**Caution:** Disconnect Sorter from power before examining or replacing fuses.
Always replace the fuse with the correct size and type for continued circuit protection.

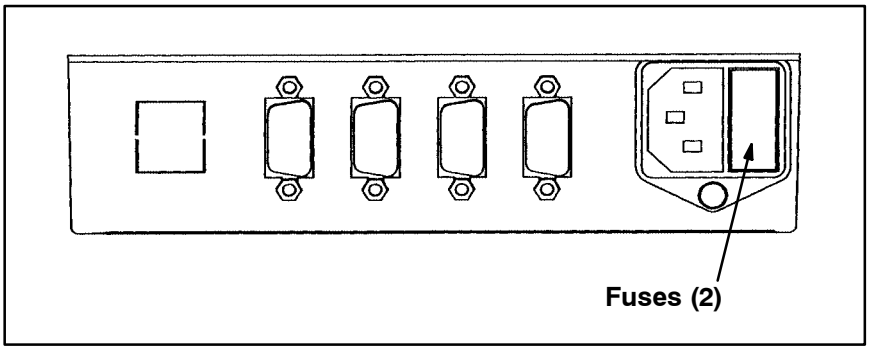



**FIGURE #88**
**FUSE LOCATION**

A coin (or other article) jam severe enough to stop the Sorting Motor will cause the Power Supply to go into a “foldback” (semi–shutdown) mode; and, if left unattended, will eventually blow one or both of the fuses.

# sorter cleaning / jam removal

## !!! IMPORTANT SAFETY INFORMATION !!!

**Caution:** Disconnect the power cord from the power source before cleaning or removing a jammed coin or other object. The coin totals and bagstop quantities will be retained by the battery backup circuitry when the power cord is disconnected.

## A. CLEANING / JAM REMOVAL

Many cleaning–related accidents are caused by failure to follow basic safety rules or written precautions. Accidents can be avoided if the operator is completely familiar with the Sorter and its operation.

Improper or inadequate maintenance or care of the Sorter can be dangerous and could result in damage to the Sorter or personal injury or death to you or other persons.

**Caution:** Never attempt cleaning when the sorter is connected to power.
Never allow tools, fingers, hair, or clothing to come near moving parts.

The frequency of any cleaning program must be determined by the operator, and will ultimately be controlled by operational environment (condition of coin, frequency of use, etc.). The Power Cord should always be disconnected before cleaning.

# sorter cleaning / jam removal

1. General Cleaning

   The Sorter should be kept clean and free from dirt and dust. Clean the outside with a soft cloth and a mild soap. NEVER use alcohol, Ketone, or any harsh chemicals on the outside surfaces. NEVER spray any liquid directly onto the Control or inside the Sorter. A small portable vacuum is handy for removing coin dust buildups from surfaces inside the Sorter.

2. Cleaning Coin Sensors / Clearing Jams in Sorting Area

   Should a badly bent or mutilated coin or other object enter the sorting area, it could become jammed and must be removed before further operation.

   The Coin Sensors, located at the coin exit points, control the counting and must be kept clean and free of dirt buildups, coin dust, bag strings, etc., at all times.

   Should either situation arise, proceed as follows:

   a. Disconnect the Sorter from Power.

   b. Lift the Top Cover for access to the finned Elastic Drive Disc.

   c. Remove the Disc by removing the Elastomeric (O–Ring) Retainer and unscrewing the large knob in the middle of the Disc.

   d. Referring to FIGURE #89, remove the protective foam strip and **CAREFULLY** clean the channel, then clean each Count Sensor with a cotton–tipped swab.

   e. Reverse the process to replace the Disc.

   f. Close the Top Cover and replace the Work Surface. Connect the Sorter to Power, and, if desired, test for proper operation with coin as follows:

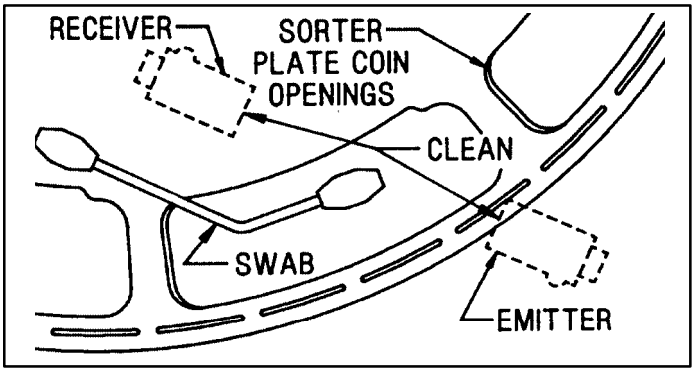



**FIGURE #89**
**COUNT SENSOR CLEANING**

## B. TESTING WITH COIN AFTER CLEANING (OPTIONAL)

a. Record all Batch and Bag/Count quantities.

b. Display the HOME SCREEN.

c. Press C/CE Key twice to clear the Batch Total Display.

d. Select BAG COUNT Icon Key ( ) on the HOME SCREEN.

e. Select the Bag Count Total by cycling the ARROW Icon key.

f. Press C/CE Key twice to clear Bag Count quantities.

g. Test as required.

h. Perform steps b – e, as described above.

i. Enter Partial Bag counts and resume operation.

3. Clearing jams in the Receiving Area.

Should a Coin Bag become overfilled, stop the Sorting Motor.

The likely causes for this condition are:

a. Incorrect Bagstop setting for size of Coin Bag.

b. Failure to empty Bag at Bagstop.

c. Improperly installed or folded Coin Bag.

If a Coin Bag is overfilled, the coins may also back–up inside the Coin Chute. Straighten the Bag and / or shake the Chute to allow the coins to fall / settle.

If the jam persists, contact your Authorized Service Representative for assistance.

## C. PAPER ROLL REPLACEMENT

Complete instruction for Paper Roll installation and replacement are contained in the Installation section at the beginning of this Guide.

# service

A worldwide network of factory–trained service specialists are available for execution of preventative maintenance programs scheduled through formal service contracts.

Our policy is to continually improve products. We reserve the right to change specifications and / or designs without notice.

All Technical Support Documentation (User Guides, Maintenance Manuals, Individual Instruction Sheets, etc., are continually monitored for correctness and compatibility with the product as it is currently manufactured.

If (when) replacement documentation is ordered, the latest version will be supplied.

If any discrepancies are found that are not clear, contact your Authorized Service Representative for assistance.

De La Rue

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